

Historic, Archive Document

Do not assume content reflects current scientific knowledge, policies, or practices.

OFFICIAL ORGAN OF THE NORTHWEST FRUIT GROWERS ASSOCIATION

APR 30 1910

VOLUME FOUR

NUMBER TEN

DOLLAR A YEAR

Agriculture

BETTER FRUIT

April 1910

THE ORIGINAL OWNER OF THE GREAT NORTHWEST FRUIT COUNTRY

PUBLISHED BY

BETTER FRUIT PUBLISHING COMPANY

HOOD RIVER, OREGON

Own an Irrigated Fruit Orchard

in the famous

Bitter Root Valley

And Provide an Annuity for Old Age

We will plant and take care of the land during the growing period, turning over to you a bearing orchard, which will thereafter yield a competence for life. Easy terms.

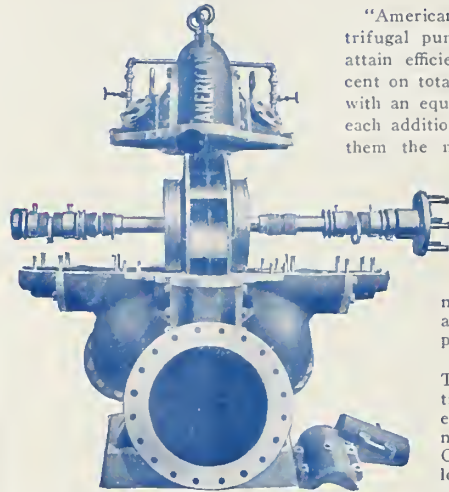
Send for Literature

Bitter Root Valley Irrigation Co.

100 Washington Street, Chicago Hamilton, Montana

All the Grand Prizes and All the Gold Medals
Given by the Alaska-Yukon-Pacific Exposition at Seattle
last summer to pumps were awarded to

“AMERICAN” PUMPING MACHINERY



“American” single stage centrifugal pumps are guaranteed to attain efficiencies of 60 to 80 per cent on total heads up to 125 feet, with an equal increase in head for each additional stage, which makes them the most economical pump made for irrigation purposes.

“American” centrifugals are made in both horizontal and vertical styles, in any size, in any number of stages, and are equipped with any power.

Write for “Efficiency Tests of American Centrifugals,” by the most eminent hydraulic engineer on the Pacific Coast. Complete catalogue, No. 104, free.

The American Well Works

General Office and Works; Aurora, Illinois, U. S. A.

Chicago Office: First National Bank Building

PACIFIC COAST SALES AGENCIES:

523 MARKET STREET, SAN FRANCISCO
160 NORTH LOS ANGELES STREET, LOS ANGELES
SECOND AND ASH STREETS, PORTLAND, OREGON
1246 FIRST AVENUE SOUTH, SEATTLE
305 COLUMBIA BUILDING, SPOKANE

The
Spokane
Valley
Has
Conveniences
Not
Found
Elsewhere



An
Orchard
Scene
at
Greenacres

PLANT AN ORCHARD IN THE SPOKANE VALLEY

The soil, the climate, the water supply, the quality and quantity of fruit equal to the best, but cheaper land. Ahead of all fruit districts in transportation and home location

PASADENA PARK

GREENACRES

EAST FARMS

OTIS ORCHARDS

WEST FARMS

OPPORTUNITY

EAST GREENACRES

SPOKANE IRRIGATED LAND CO.

401 Sprague Street

SPOKANE, WASHINGTON

Maginnis Galvanized Steel Flume

NO RIVETS

NO SOLDER

ANY SIZE

ANY LENGTH



No. 96 Maginnis Steel Flume, 600 Feet Long

Don't waste your time and money repairing an old wooden flume—you can't afford it. The Maginnis Galvanized Steel Flume does not leak. It saves all of the water all of the time, and will outlast five well-built wooden flumes without cost for repairs or loss of water.

T. C. EGLESTON

A Card will bring you a Catalogue

SALES MANAGER

714 Ideal Building, DENVER

"CALIFORNIA—Now or Never!"

"The Kuhn California Project" will irrigate 250,000 acres in the famous Sacramento Valley. The land is ready! The water is ready! Are you ready? The sale of these rich valley lands has just begun in tracts of ten to eighty acres. Small payment down; then ten annual payments.

The valley is garden soil, fifty feet deep, yielding immense crops of fruit, alfalfa, sugar beets and all the famous products of California. Mature orange groves on these lands have yielded as high as \$1,000 per acre. If you are going to have a farm, why not have the best? The Kuhns are always looking for the best, and their experts tell them in this enterprise they have found it. They are putting millions of dollars into improvements to make it still better. The land is close to big markets and will pay for itself.

You take no chance in buying land under the Kuhn projects. The Kuhn interests are irrigating 400,000 acres in the Twin Falls country, Idaho. Their great Sacramento Valley project offers an almost frostless winter and a still wider range of crops. Organize a California colony in your own city or town. Take your neighbors with you.



Just published a very choice book of forty-eight pages, "California—Now or Never." It is by far the handsomest California book ever issued and will show you at a glance whether you want a home ranch in California. To insure a select distribution, it is priced at ten cents. All other publications which are fully descriptive are free. Fill out the coupon below and mail. If you want the new book, enclose ten cents for each copy.

H. L. Hollister, 205 La Salle Street, Chicago, Illinois

Please send free information about Sacramento Valley Irrigated Lands to the following addresses:

Steinhardt & Kelly

101 Park Place, New York

*The largest and most extensive fruit concern in the world
operating in all the fruit growing sections of the civilized globe*

Exclusive Purveyors of High Class Fruits

STEINHARDT & KELLY HANDLE MORE

BOX APPLES

THAN ANY OTHER CONCERN IN THE COUNTRY
and was the first fruit house to extensively introduce the Northwestern product to the consumers of the East. With able representation in all the leading markets STEINHARDT & KELLY are enabled to handle the entire crops of the most extensive districts with utmost ease and celerity

CORRESPONDENCE WITH ASSOCIATIONS, UNIONS AND
INDIVIDUAL GROWERS WILL BE GIVEN PERSONAL ATTENTION

A Revolution in Spraying!

APTERITE, THE NEW SOIL FUMIGANT

HIGHLY
CONCENTRATED
RELIABLE
AND
EFFECTIVE
CLEANSE AND
INVIGORATE



NO SEDIMENT
NO CLOGGING
MIX INSTANTLY
WITH
COLD WATER

Read Hood River's Testimony

Hood River, Oregon, November 9, 1909.

Mr. C. G. Roberts:

In response to your request for results in using Cooper's Sprays last season, I have to inform you that it was a success, and am so well satisfied that I propose to use nothing else during the coming season, and confidently recommend its use to my neighbors in Hood River and fruit growers generally. The V1 or winter spray is most convenient and clean handling, and cleaned up my trees from loose bark and insects or eggs which may have harbored therein. The summer spray, V3, destroyed codling moth, the brown aphid, and, so far as I know, the spores of fungus, as my apples ripened almost free of imperfection, ready for packing, as I did not require to wipe them, as usual by other sprays.

L. D. Boyed.

Hood River, Oregon, November 18, 1909.

This is to certify that I used Cooper's V1 Spray for fungus, according to directions, on six acres of Newtowns last March, of which last year was about 20 per cent fungus, this year not more than one per cent. The spray is easy to prepare and very agreeable to apply, and I consider it the most economical spray I ever used. I use the finest nozzle, with a high pressure, and choose a quiet day for spraying to get the best results.

O. M. DeWitt.

Hood River, Oregon, November 17, 1909.

In regard to the Cooper Spray, in answer to your inquiries as to what success I have had with it, will say that I have been somewhat worried about fungus on my apples for several years until last year, when I used V1 for winter spray, and am well pleased with results, as my apples were almost entirely clean of fungus this season. Shall try it again the coming season.

J. R. Crosby.

Hood River, Oregon, November 17, 1909.

I used the Cooper Spray V1 for fungus and can say that I am well pleased with its results. On a crop of about 300 boxes of apples I had only about one box that was affected with fungus. As for convenience, I can recommend it ahead of any other spray I ever used. My trees were affected but very little with aphid after using the V1.

J. H. Eggert.

Hood River, Oregon, November 20, 1909.

Mr. C. G. Roberts:

I have used the Cooper Winter Spray and it put my trees in fine and healthy shape. I consider it a very economical spray and pleasant to handle, not hurting the hands nor having the disagreeable effect on the hands and face of the sprayer of the lime and sulphur sprays.

E. C. Mahaney.

Hood River, Oregon, November 17, 1909.

Mr. C. G. Roberts:

Dear Sir—In answer to your inquiry about results from the use of Cooper's Spray, will say that my apple orchard had become badly infested with fungus. I made one application of V1 spray early in March, while the trees were yet dormant, with results that my apple crop is practically free from that disease. It also cleansed the trees of moss and other objectionable growths. I am so well pleased with results that I shall use it again next year.

Yours very truly,

M. D. Odell.

Hood River, Oregon, November 20, 1909.

Mr. C. G. Roberts:

I have used three gallons of winter spray, the Cooper V1, on my orchard and the orchards near mine that I am caring for. I find it the best spray I ever used, as it cleaned my trees of scale and fungus and put the trees in the most healthy condition. This spray is pleasant to handle, having none of the objectionable qualities of lime and sulphur spray, and I consider it the most economical I ever used. I recommend it to my neighbors and fruit growers generally.

L. A. E. Clark, Pippin Hill Fruit Farm.

Hood River, Oregon, November 20, 1909.

C. G. Roberts, General Agents Cooper's Spray:

Dear Sir—I used V2 fluid, or summer spray, this spring, for green aphid, and got very satisfactory results; in fact, as good as any other kind I ever used.

Yours truly,

A. D. Moe.

Hood River, Oregon, November 13, 1909.

I will say that I have tried the Cooper Summer Spray and it cleaned my trees from the green aphid as good as any spray I have had experience with.

E. N. Benson.

Hood River, Oregon, November 20, 1909.

This is to certify that I have used the Cooper Spray, V2, on my orchard and it cleared it of green aphid and fungus and put the trees in healthy condition.

Louise J. Schiller.

I hereby certify that I used the Cooper Spray once in the spring and the trees showed marked improvement.

Charles Davis.

Hood River, Oregon, November 27, 1909.

This is to certify that I have used Cooper's Tree Spray Fluids, V1, for killing San Jose scale and found it very effectual.

G. R. Castner, County Fruit Inspector.

Write for 32-page booklet (third edition) just published

Containing much interesting matter, also testimonials from many other fruit growers

C. G. ROBERTS

247 Ash Street

Portland, Oregon

LOCAL OREGON AGENTS

D. McDonald, Hood River

Maier & Shannon, The Dalles

F. H. Churchill, Roseburg

H. Dyer & Co., Myrtle Creek

M. Brown & Co., Salem

Glen Fabrick, Medford

Sole Manufacturers:

WILLIAM COOPER AND NEPHEWS, 64 West Illinois Street, Chicago, Illinois

Richey & Gilbert Co.H. M. GILBERT, *President and Manager*Growers and Shippers of
**YAKIMA VALLEY
FRUITS AND PRODUCE**Specialties: Apples, Peaches,
Pears and Cantaloupes

TOPPENISH, WASHINGTON

Correspondence Solicited
RYAN & VIRDEN CO.

BUTTE, MONTANA

Branch Houses:
Livingstone, Billings, Sheridan,
Montana; Lewiston, Idaho**Wholesale Fruit and Produce**WE HAVE MODERN COLD STORAGE FACILITIES
ESSENTIAL FOR HANDLING YOUR PRODUCTS*A strong house that gives reliable market
reports and prompt cash returns*The Old Reliable
BELL & CO.

Incorporated

WHOLESALE

**FRUITS AND
PRODUCE**112-114 Front Street
PORTLAND, OREGON**PORTLAND
BROKERAGE CO.**

Consignments solicited with quick returns

**FRUITS, PRODUCE
BUTTER AND EGGS**

TELEPHONE A 5758

206 Stark St., Portland, Oregon
Between Front and First StreetsFAMOUS HOOD RIVER
APPLESSpitzenbergs, Newtowns, Jonathans,
Arkansas Blacks, Ortleys, Baldwins,
Winesaps, R. C. Pippins, Ben Davis,
M. B. Twigs

Look Good, Taste Better, Sell Best

*Grade and Pack Guaranteed***Apple Growers' Union**
Hood River, Oregon**H. WOODS CO.**
WHOLESALE FRUITS
and
COMMISSION

Apples, Peaches and Strawberries

127 South Water Street
CHICAGO, ILLINOIS**Levy & Spiegel**

WHOLESALE

FRUITS & PRODUCE**Commission Merchants**

SOLICIT YOUR CONSIGNMENTS

Top Prices and Prompt Returns
PORTLAND, OREGONFAMOUS HOOD RIVER
StrawberriesTHE FINEST BERRY
ON EARTH AND THE
BEST SHIPPER

Look Good, but Taste Better

*Fancy Pack Guaranteed***FRUIT GROWERS' UNION**
Hood River, Oregon**Mark Levy & Co.**COMMISSION
MERCHANTS**WHOLESALE FRUITS**121-123 FRONT AND
200 WASHINGTON ST.
PORTLAND, OREGON**O. W. BUTTS****Wholesale Fruits
and Commission**

STRAWBERRIES AND APPLES

*Our Specialty*A Strong House—Pioneer Dealer of
Thirty Years' Experience

OMAHA, NEBRASKA

IF YOU WANT TO
MARKET YOUR**FRUIT**

RIGHT

ALWAYS SHIP TO

W. B. Glafke Co.WHOLESALE FRUITS
AND PRODUCE108-110 Front Street
PORTLAND, OREGON

W. H. Dryer

W. W. Bollam

Dryer, Bollam & Co.**General
Commission
Merchants**128 FRONT STREET
PORTLAND, OREGON
Telephone Main 2348**SGOBEL & DAY**

NEW YORK

APPLES, PEARS, PRUNES

**QUALITY
QUALITY
QUALITY**

MCEWEN & KOSKEY

Wholesale Fruit and Produce
and General Commission
Merchants

129 Front Street, Portland, Oregon

CONSIGNMENTS

Are solicited, all your shipments
receiving our personal attention

Stranahan & Clark

DEALERS IN

Commercial Fertilizers
Land Plaster, Lime
Plaster Paris, Cement
Building Plasters

HOOD RIVER, OREGON

Davenport Bros.

Portland, Oregon

WHOLESALE
FRUIT &
PRODUCE

Growers and Shippers of the Famous

Mosier Valley Fruits

Ryan & Newton Company

Wholesale Fruits & Produce

Spokane, Washington

We have modern cold stor-
age facilities essential for the
handling of your products

Reliable Market Reports

PROMPT CASH RETURNS

YAKIMA COUNTY HORTICULTURAL UNION

North Yakima, Washington

C. R. Paddock, Manager

Apples, Pears, Peaches, Cherries,
Plums, Prunes, Apricots, Grapes
and Cantaloupes

Mixed carloads start about
July 20. Straight carloads in
season. Our fruit is the very
best grade; pack guaranteed

We use Revised Economy Code

LINDSAY & CO. LTD. Wholesale Fruits

HELENA, MONTANA

Established in Helena Quarter of a Century

Branch houses: Great Falls, Mis-
soula and Billings, Montana

Pearson-Page Co.

131-133 Front Street
PORTLAND, OREGON

Superior facilities for handling

PEACHES
APPLES AND
PEARS

Solicit Your Consignments

Reliable Market Reports Prompt Cash Returns

Stanley-Smith Lumber Co.

WHOLESALE AND RETAIL

LUMBER

Lath, Shingles, Wood, Etc.

HOOD RIVER, OREGON

FRUIT Western
Soft Pine.
Light, strong
and durable.
"Better Fruit"
subscribers
demand the
"Better Box."

BOXES

CAN MAKE TWO CARLOADS DAILY

WASHINGTON MILL CO.

Wholesale Manufacturers

Spokane, Washington

European Receivers of American Fruits

SIMONS, JACOBS & CO.
GLASGOW

SIMONS, SHUTTLEWORTH & CO.
LIVERPOOL and MANCHESTER

GARCIA, JACOBS & CO.
LONDON

J. H. LUTTEN & SON
HAMBURG

OMER DECUGIS ET FILS
PARIS

For Market Information Address:

Simons, Shuttleworth & French Co.
204 Franklin Street, New York

Walter Webling
46 Clinton Street, Boston

John Brown
Brighton, Ontario

Ira B. Solomon
Canning, Nova Scotia

Wm. Clement
Montreal, Quebec

D. L. Dick
Portland, Maine

OUR SPECIALTIES ARE APPLES AND PEARS

D. CROSSLEY & SONS

Established 1878

APPLES FOR EXPORT

California, Oregon, Washington, Idaho and Florida fruits. Apples handled in all European markets. Checks mailed from our New York office same day apples are sold on the other side. We are not agents we **sell apples**. We make a specialty of handling cherries, apricots, peaches and all early fruits on the New York market. Correspondence solicited.

200 TO 204 FRANKLIN STREET, NEW YORK

LIVERPOOL

NEW YORK

BOSTON

GLASGOW

Arcadia Orchards Company—Irrigated Orchards

The Land of Sunshine

The Center of the Best Fruit Belt in Washington

Only twenty-two miles from Spokane. Excellent transportation facilities, ideal climate, irrigation by gravity

Our Plan: We plant, cultivate, irrigate and care for your orchard for four years, and pay your taxes for five years. You may remain at your present occupation while we bring your orchard to bearing. No charge for water. The largest private irrigation project in the West. Buy now, before a further increase in values. Easy terms. Send for literature.

ARCADIA ORCHARDS COMPANY

Hyde Building, SPOKANE, WASHINGTON

WALLA WALLA WASHINGTON

Is the center of the oldest orchard district of the Northwest

OUR ALTITUDE IS RIGHT
OUR LOCATION IS RIGHT
OUR CLIMATE IS RIGHT
OUR SOIL IS RIGHT

In fact, the Walla Walla Valley has been making good as a place to farm and a place to live for the past fifty years—yes, we emphasize that latter point, because it is of more importance than is sometimes understood. THE WALLA WALLA VALLEY IS A GOOD PLACE TO LIVE, for here agriculture goes hand in hand with a long established "civilization." The chief city of the valley, in addition to offering every ordinary convenience and benefit, is the home of the famous Whitman College, now accumulating an endowment of \$2,000,000, and ready today, with the scores of other schools throughout the valley, to welcome your children to opportunities equal to those of the East.

THE WALLA WALLA COMMERCIAL CLUB

Will cheerfully answer all the questions you may ask regarding this

SOUTHEAST CORNER
OF THE
NORTHWEST STATE

CALDWELL APPLE BELT

Canyon County, Idaho

THE HOME OF THE PERFECT JONATHAN

We are the owners of the prize-winning apple orchard of the United States, having won seven individual prizes out of a possible eight at the National Horticultural Congress at Council Bluffs, Iowa, December, 1908, against nineteen competing states.

We are land dealers and own our offerings. Fruit lands and suburban tracts our specialties. Liberal terms.

Address

H. W. DORMAN

Manager Dorman Land Company

Caldwell, Idaho

WALNUTS

GRAFTED FRANQUETTE TREES

IF YOU WANT the best of anything, go to one who specializes on that thing. We are offering the best that can be produced in the walnut line. Grafts selected only from our heaviest bearing trees of Vrooman strain and grafted on the best selected California and Royal hybrid roots grown. Also, on the same rapid-growing roots, Mayette, Parisienne, Meylan, Bijou, San Jose Mayette, etc., or any local variety of which you have grafts, if ordered a year in advance. Write for catalogue and price list.

IMPERIAL WALNUT NURSERY

R. F. D. No. 7

San Jose, California

Gibson Fruit Company

Not Incorporated

*Wholesale Commission
Shippers' Marketing Agents
Fruit and Produce*

Our Own Cold Storage Plant on Premises

131 South Water Street

CHICAGO, ILLINOIS

H. J. SHINN & CO.

The Old Reliable Fruit House

We occupy our own building, which is one block square and located on Northern Pacific tracks, Spokane, Washington.

Consignments solicited. We make weekly returns.

References:

Exchange National Bank

R. G. Dun & Co.

SPOKANE, WASHINGTON

John Leland Henderson

Incorporated
COUNTY SURVEYOR

HOOD RIVER, OREGON

POSSESSES

CLIMATE—A desirable medium between the drier eastern and the more moist western conditions of the Northwest.

SOIL—Volcanic ash, rich in phosphates, and recognized as the best in the world for apples and strawberries.

Makes a specialty of real estate, conveying, loans and surveying. The president, John Leland Henderson, is a practicing lawyer residing in Hood River, and has been identified with the Hood River Valley for thirty-three years

Willamette Valley Fruit Lands

In Tracts to Suit

Rich soil. Delightful climate
For descriptive literature write

OLMSTED LAND CO.

Salem, Oregon

J. F. LITTOOY

CONSULTING HORTICULTURIST

Orchard Director, Orchard Schemes Examined, Orchard Plans Submitted, Orchard Soils and Sites Selected, Nurseries Visited and Stock Selected, Values Examined for Farm Loans, Purchasing Agent for Land and Orchard Investments, Acts as Power of Attorney in Selection of Carey Act Lands.

MOUNTAIN HOME, IDAHO

Grant McCann & Co.

Cor. Railroad and Stephens Street
SPOKANE, WASHINGTON

We handle local or carload shipments of fruit and vegetables. Honest dealings and prompt returns.

References: Exchange National Bank, Spokane; Bradstreets Mercantile Agency.

T. O'MALLEY CO.

COMMISSION MERCHANTS

Wholesale Fruits and Produce

We make a specialty
in Fancy Apples, Pears and
Strawberries

130 Front Street, Portland, Oregon

We will plant and care for an

Apple Orchard

for you until it begins to bear—meantime you make small monthly payments

As the largest orchard operators in the Spokane country we invite you to become interested with us and in a way entirely within your means. I will gladly submit full data, price of tracts, terms, and other information of value upon request.

Just request our booklet, "The Commercial Orchard," and say you want to know more. A postal will do.—A. G. Hanauer, Vice President.

Hanauer-Graves Company

First and Stevens
SPOKANE, WASHINGTON

Owners of
MEADOW LAKE FARMS

Ten miles southwest of Spokane on Cheney Electric Line. Five and ten-acre tracts, \$150.00 to \$200.00 an acre. Your own terms.



White Salmon Valley

WASHINGTON

Across the river from Hood River Valley, Oregon in the Banner Apple Belt of the World



The WHITE SALMON VALLEY today presents OPPORTUNITIES FOR INVESTMENT beyond that of any other FRUIT REGION in the Northwest. It is the north half of a LARGE VALLEY lying between Mount Adams on the north and Mount Hood on the south. The mighty Columbia flows between and divides this valley. From the Columbia River to Mount Hood forms the Hood River Valley, and from the Columbia River to Mount Adams forms the White Salmon Valley. Both these mountains are snowclad all the year and influence the climatic conditions. This, together with a volcanic ash soil, produces apples that are superior to all others in the world in FLAVOR, SIZE, COLOR, and, most important of all, KEEPING AND SHIPPING QUALITIES.

Ninety per cent of the fruit grown in this valley is exported, bringing the highest market prices.

THE CLIMATE of this region is ideal. It is located in the midst of the CASCADES, with a pure mountain air and free from excessive rains or drouth. The snow-covered peaks at either end of the valley temper the heat of summer and make the summer nights cool and invigorating. The winters are as a rule mild and short. The scenery is as fine as may be found anywhere on the continent.

The valley has been held back heretofore through lack of railroad transportation, but the SPOKANE, PORTLAND & SEATTLE RAILROAD, part of the Hill system, now in operation, gives this valley the best of shipping facilities.

NOW IS THE TIME TO SECURE A CHOICE ORCHARD TRACT AT A LOW FIGURE. Write today for particulars of this wonderful valley to the

WHITE SALMON VALLEY DEVELOPMENT LEAGUE

White Salmon, Washington

WHITE SALMON ORCHARD LANDS

The White Salmon Valley, which is located on the "North Bank" road, on the north bank of the Columbia River, sixty-five miles east of Portland, directly opposite Hood River, Oregon, is becoming widely known as one of the best fruit districts in the West. Here we find a climate unsurpassed, mild winters, long summers, and the very best red shot and black loam soil, such as is required for growing the best grades of commercial winter apples. Fruit growing in this district is being made a success by many people from the city who have never before made a study of fruit raising. Our "ranchers" are made up of many American business men (many college graduates and professional men) who have selected fruit growing in this valley after a comparison with other districts. We have secured for sale during the next thirty days many of the most desirable tracts of orchard land in this district, ranging from \$25 an acre up, in tracts of 10 acres up to 320 acres. We advertise no land we have not personally examined, and guarantee every tract as we represent it. We offer this month the following SPECIALS as leaders, knowing each number will make the purchaser a good investment, either as a home or as a tract to subdivide and resell at an advance. Land values have advanced from 10 to 25 per cent during the past year and we predict further advances during the next six months. If there is a tract number given in this list of bargains which you wish us to hold for you until you have examined, wire us \$50 as a 21-day option and we agree to hold same until you have examined it (if within twenty-one days). We further agree to refund the option money if the tract asked for is not found to be as good and as we represent it. If purchase is made the \$50 option money will be applied on the purchase price. We refer to the White Salmon Valley Bank, Gillett Bros.' private bank, also any of our customers whom we have sold, on request.

378—60 acres 1 mile from town of Husum, 8 from White Salmon; 30 to 40 acres good orchard land; 20 acres easily cleared, balance light growth of fir. The following offer is made to realize a quick sale on easy terms: He will set 10 acres to winter apples (selected by purchaser) and care for same until October 1. Also sell on these very easy terms: \$1,000 cash, \$500 in one year, \$500 in two years, \$2,000 in three years, \$2,000 in four years, making a total of only \$6,000, with 10 acres set to commercial apples.

379—80 acres, with flowing spring water the entire year; red shot soil (small hard substance containing iron and other minerals about the size of BB shot; best fruit grown on such soil); some black loam suitable for garden and small fruits. This 80 has little waste land, being especially adapted to the successful growing of fruit. Fine view of Mount Adams from this ranch; bearing orchard on tract adjoining; being settled up thickly by Eastern people. Present price only \$47.50 per acre if 80 is sold at once, or \$50 an acre if either 40 sold separately. Terms, half cash, balance 3 years (on or before) at 8 per cent.

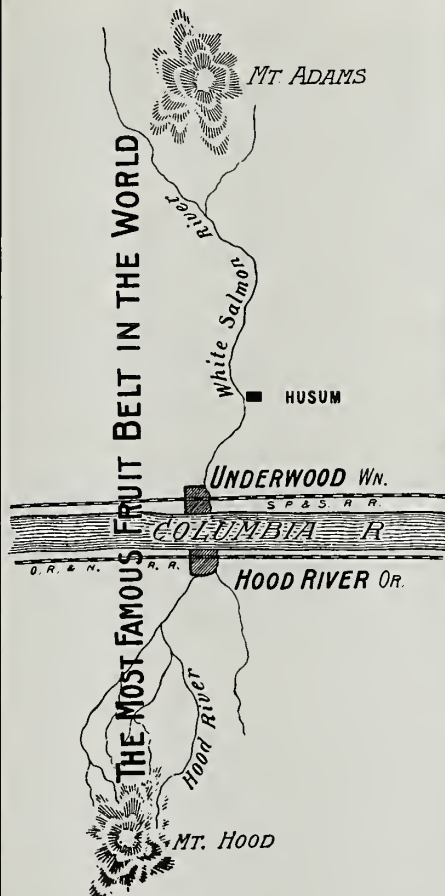
381—10 acres, partly improved with house, woodshed, fruit cellar, and 2½ acres ready for fruit trees. All slashed (timber and brush cut) and burned, except small grove for shade around the house. All of this 10 is suitable for orchard; no waste land on the tract. Surrounded by 10 acre tracts in a well-known fruit colony, this ten was one of the first selected, therefore has many advantages, being on the main road, fine view of Mount Adams and easily set to orchard. Compare price with UNIMPROVED land. Price only \$150 an acre; half cash, balance 3 years, 8 per cent.

Space does not allow publishing our entire list, ranging in price from \$25 an acre up; the above numbers are a few of our best values this month. Would advise anyone contemplating purchasing a tract of orchard land to do so before prices advance.

THE WHITE SALMON REALTY CO.

H. W. DAY

H. G. DAY



UNDERWOOD

The Gateway to the White Salmon Valley



WHITE SALMON VALLEY FRUIT GROWERS' UNION OF UNDERWOOD, WASHINGTON,
WON THREE IMPORTANT PREMIUMS AT SPOKANE

First on Best Four-Tier Newtowns, Second on Best Ten Boxes Newtowns, First on Best Pack

Twenty minutes from Hood River by ferry. Two hours by rail, seven hours by boat from Portland. Twenty-five thousand acres first-class fruit land tributary to this point. Has a strong Apple Growers' Union, which controls the output of the valley. Same fruit, same markets, same prices as Hood River has. Fine class of people coming in—a community of homes. Land close in to river and railroad \$40.00 to \$150.00 an acre now, but advancing rapidly.

Write, phone or call on

W. F. CASH UNDERWOOD
WASHINGTON

Newtowns Yield \$1800 per Acre

James Lacey on an acre of Newtowns marketed 791 boxes of first grade apples, which brought \$1,698.55. He has left fifty boxes of seconds, which will sell for about \$1.50 per box, and bring the total gross sales from one acre of Newtowns up to \$1,800. The returns from his three and a half acres of bearing apples, all kinds, are \$3,801.76 for first grade apples alone, and second grades will fully pay for the labor of taking care of the crop. This makes an average of over \$1,000 an acre profit.

*Live facts in a lively way. Live facts for men and women
Facts that affect you—your family*

HOOD RIVER VALLEY APPLE LANDS



Fancy Hood River Apple Pack



Hood River Orchard in Bloom, Giving Promise of Golden Returns

AGENTS FOR MOUNT HOOD RAILROAD COMPANY
LOGGED OFF LANDS IN UPPER HOOD RIVER VALLEY

Many started in a small way; today they are independent
You can begin today. It pays to see us

He who investigates for himself becomes "the man who knows"

W. J. BAKER & CO.

HOOD RIVER, OREGON

The oldest Real Estate Firm in Hood River

First-class Apple Land our specialty

SEND TODAY FOR LARGE LIST OF ORCHARD LAND, IMPROVED
AND UNIMPROVED, AND HANDSOME ILLUSTRATED BOOKLET

MOSIER, OREGON

Is on the main line of the Oregon Railroad & Navigation Company, seventy-two miles east of Portland and six miles east of Hood River, in the very heart of the world's most famous apple belt. GOOD land may be had for less money in Mosier than in any other PROVEN fruit section in the United States.

LOOK AT THIS

LOOK AT THIS

Here are a Few Good Buys

LOOK THEM OVER

No. 99. Fairview Orchard Tracts. This is a subdivision of 240 acres of the best land in the Mosier district. The soil is very deep and rich and is wonderfully adapted to apple raising. The view from this place is the very best to be had in any well settled neighborhood in the State of Oregon. From here one is able to see Mount Hood, Mount Adams, Mount Defiance, a beautiful stretch of the Columbia River, the foothills of Washington and most of the improved orchards in the Mosier district. These tracts are only $3\frac{1}{2}$ miles from Mosier, on a good road, and may be had for from \$75 to \$110 an acre. You will have to talk quick for these, as they will all be gone by July 1. First choice still open.

No. 72. 10 or 20 acres of the very best land in the district. Surrounded by bearing orchards, beautiful neighborhood, soil 30 feet deep; all in young trees 1 to 4 years old. Price \$500 an acre; terms easy.

No. 74. $33\frac{1}{2}$ acres; no waste; 16 acres in bearing trees, 1 acre in 2-year-olds, 3 acres ready for the trees, balance easy to clear at \$35 an acre. This is the biggest paying orchard in the Mosier district. Fair house, fine barn, chicken house and other outbuildings. Price \$30,000; half cash and balance easy.

No. 69. 160 acres 5 miles from Mosier, on good road; very little waste land on this place; good house, good barn and outbuildings. Price \$8,500; half cash, balance to suit.

No. 53. 40 acres fine fruit land; all lays well and only 6 miles from Mosier; all fenced and 3 acres cleared; close to good school; good view. Has one of the best bungalows in the country and good barn and shed; 5 acres cleared and set to trees. Price \$3,650; one-half cash and balance at \$30 a month.

No. 64. 15 acres 6 miles from Mosier, on the best road in the country. Finest view on earth from this place. Two acres cleared and a small family orchard in bearing; good 5-room house, two large barns, shed, chicken house and other outbuildings. All of this land can be cleared for about \$25 an acre. Value of buildings on this place over \$1,000. Price \$2,000; \$650 cash and the balance \$100 a year at 6 per cent. Beat this if you can.

No. 100. 40 acres, fenced, $6\frac{1}{2}$ miles from Mosier; some waste; good spring. For quick sale will take \$800.

No. 68. 80 acres $2\frac{3}{4}$ miles from Mosier, on good road; 8 good springs and creek on place; fair house; all fenced, some cleared. Price \$75 an acre; half cash, balance easy.

No. 51. 20 acres $2\frac{1}{2}$ miles from town, on best road in the country. Between 3 and 4 acres ready for trees and balance can be cleared for \$20 an acre. Splendid view from this place. Price \$1,700; \$600 will handle this place if taken quick.

I have other good buys in and around Mosier that I will be glad to tell you of if you will write me and tell me about what you are looking for.

ADDRESS

D. D. HAIL

ASK FOR BOOKLET

MOSIER, OREGON

\$1000

PER ACRE NET

\$1000



MOSIER APPLES AT HOOD RIVER FAIR

This is not an unusual profit for producing apple orchards in Oregon. It is a perfectly possible profit for any man of persistence and common sense who will select land in a proven apple district in Oregon and develop it properly. If you are at all interested in fruit growing we advise you to investigate the Mosier Valley. This valley adjoins the famous Hood River Valley and is properly a part of it so far as the character of the soil and the quality of the fruit produced as concerned. We claim that the apples produced in Mosier Valley are second to none and that there is no section anywhere which offers the fruit grower a greater opportunity. Land in the Mosier Valley can be obtained for very low prices, and can be cleared with comparatively little effort. These lands can be made to increase in value from 100 to 500 per cent in two years by clearing and planting trees. We invite the most careful and critical inspection of Mosier Valley, confident of the outcome. For full particulars about this Valley address

SECRETARY MOSIER VALLEY COMMERCIAL CLUB

MOSIER, OREGON



A Five-year-old Cherry Tree Grown at The Dalles

*We Don't Have
to Irrigate*

Come and get some fruit land
while it is cheap

IT IS GOING UP, SURE

O. J. Laing & Co.

Dealers in Fruit Lands

The Dalles, Oregon

White Salmon Valley

40 acres, \$4,000; 3 acres of trees, Spitzenbergs and Newtowns, 3 and 4 years old; will bear some fruit this year. Five acres under cultivation; ten acres easily cleared; small buildings; pure water; best air and water drainage.

Ask for complete list.

WHITE SALMON LAND COMPANY

Office over Post Office Building

WHITE SALMON, WASHINGTON

For Better Fruit Buy Better Land

JUST OVER THE MOUNTAINS FROM OREGON IN A BEAUTIFUL CALIFORNIA VALLEY
YOU CAN PICK FRUIT EVERY MONTH IN THE YEAR

You can cut alfalfa six times and net \$60 per acre. Two crops of potatoes and other vegetables give double the results obtained elsewhere. Our irrigated lands are selling fast at \$150 per acre, with water right, on easy terms. No damaging frosts; cheap river and rail transportation; adjoining the Stanford University vineyard. The chance of a lifetime.

WRITE US FOR FREE BOOKLET

Los Molinos Land Company Cone Street, Los Molinos, Tehama County, California

First Class Bargains in Hood River

- 6 acres on the east side, all in orchard; no buildings; \$2,700.
- 10 acres west side, very best land; 8 acres orchard, 2 and 4 years old; 3 acres strawberries; 10 shares water stock; no buildings; \$9,000.
- 10 acres on the west side, all in 4 and 5-year-old trees; 6 acres strawberries between the trees; fruits of all kinds for home use; good buildings, farm implements; \$10,500 for quick sale.
- 10 acres west side; 8 acres in bearing orchard; good house, with running water; splendid bargain; \$10,000.
- 40 acres on the west side; 8 acres in full bearing 14-year-old trees, 20 acres 4 and 5 years old, 5 acres 2 years old; good buildings; splendid property; \$50,000.
- 20 acres on the east side, mostly in 3-year-old Spitzenbergs and Newtowns; very best land; splendid bargain; \$16,000.
- 19 acres on the west side; 16 acres in clover and alfalfa; all first-class apple land; splendid property and fine building site; red shot soil; \$7,500.
- 20 acres on the west side, all in orchard; 15 acres 3 and 4-year-old trees, and 5 acres in bearing; \$18,000.
- 21 acres on the east side; 7 acres in bearing trees, balance from 2 to 6 years old; buildings and 5 inches irrigating water; \$21,000 for short time only.
- 40 acres in Mosier; 20 acres in orchard from 3 to 9 years old, all good varieties; buildings, etc.; \$11,000.

See us for the best properties in the Hood River district

J. H. HEILBRONNER & CO.

THE RELIABLE DEALERS

The Davidson Building

HOOD RIVER, OREGON

HOOD RIVER APPLE LANDS

Pay Big Dividends—Values Will Double in Three Years

WRITE FOR COMPLETE LIST OF PROPERTIES

35 ACRES—20 acres of which are planted to Yellow Newtowns and Spitzenbergs, one-third of which are in full bearing; balance is partly cleared; large 8-room house, stone apple house, 5-room tenant house, good barn, etc.; also new pumping plant, which cost \$700. Located $\frac{1}{2}$ miles from Hood River, on county road. This place will sell for \$40,000 within a year, and is a big snap at \$30,000. Terms.

20 ACRES—Mostly improved; 9 acres in commercial orchard, 6 acres 3 years old and the balance 1 and 2 years old; 3 acres of the orchard is planted to strawberries; 5 acres in stumps, ready to clear; balance of place in meadow; small house; 6 inches of water stock; 7 miles from town on county road. A good buy at \$10,000; \$3,000 cash.

20 ACRES—About 7 miles out on the east side; fine loose red shot soil; perfect drainage; on main county road; $\frac{1}{4}$ mile to railroad station; near school, church and store. This entire tract is to be cleared and set to strictly commercial orchard this spring at the price of \$8,000; \$2,000 cash, balance in 5 years at 7 per cent.

75 ACRES—Right in the heart of the valley; 16 acres in commercial orchard, half of which is in full bearing, balance 1 to 5 years old; 14 acres more in cultivation, balance in pine and oak timber, light clearing; large house with modern plumbing; stock, farm implements and everything included at the price of \$25,000; one-half cash.

26 ACRES—Partly improved; fine red shot soil; $\frac{3}{2}$ miles southwest of Hood River; 8 acres under cultivation; 8 acres more nearly cleared up; balance of place in pine and oak timber; 6 acres in orchards as follows: 50 3-year-old Newtowns and Spitzenbergs, 100 2-year-old Newtowns and Spitzenbergs, 150 1-year-old Newtowns and Spitzenbergs and 100 1-year-old peach trees; 5-room house and small barn. Price \$5,500.

15 ACRES—All very best volcanic soil; 6 acres in 1 and 2-year-old commercial orchard with 50 peach trees as fillers; 6 acres in brush and light timber; 3 acres in a natural park between the house and river, with road winding through it, with a magnificent view of river and mountains; new modern 6-room artistic bungalow, with spring water piped through same; new barn; cow, chickens, wagon, buggy, etc., go with place; also 10 shares in Apple Growers' Union. Price \$10,000; \$2,000 cash will handle it.

22 ACRES—Unimproved; good clay loam soil, good drainage; 4 miles southwest of town, on main county road; 3 acres cleared and plowed; balance all slashed and burned; under the lower ditch. Price \$8,000; \$3,500 cash. This place will easily be worth \$700 per acre when set to orchard.

40 ACRES—7 miles out on east side; 23 acres cleared; 10 acres in strictly commercial orchard, 7 acres of which are in bearing, 6 and 8 years old; orchard is in perfect condition; 6 acres in wheat and vetch and 3 acres in alfalfa. All kinds of fruits, berries, etc.; beautiful building site; stock and tools go with place. Price \$20,000; \$12,500 cash, balance 5 years at 7 per cent.

12½ ACRES—Nicely located in the Oak Grove district; 6 acres in 4-year-old Newtowns and Spitzenbergs in fine condition, 3 acres in 2-year-old strawberries, 2 acres in 1-year-old strawberries; 50 peach trees as fillers; good family orchard; small house. A splendid buy at \$7,500; \$4,000 cash.

20 ACRES—Unimproved, 7 miles out on the east side; red shot clay soil, high and slightly, perfect drainage. This tract lies fine for orchard; under the East Fork irrigation ditch. Beautiful building spot with several large oak trees. One of the best places in the entire valley. Price \$300 per acre; \$4,000 cash.

DEVLIN & FIREBAUGH

THE LEADING DEALERS

SWETLAND BUILDING, Portland, Oregon

HOOD RIVER, OREGON

BETTER FRUIT

A MONTHLY ILLUSTRATED MAGAZINE PUBLISHED IN THE INTEREST
OF MODERN AND PROGRESSIVE FRUIT GROWING AND MARKETING

GROWING STRAWBERRIES AND CARING FOR THEM

BY W. H. BURKE, SECRETARY AND TREASURER R. M. KELLOGG COMPANY, THREE RIVERS, MICHIGAN

WHEN the editor of "Better Fruit" wrote the writer, asking for an article on strawberry culture, he put the case this way: "Suppose I came to you and said I wanted to set five acres to strawberries. I would want you to tell me what kind to plant, how to plant them, how to prepare the soil, how to set them, how to cultivate them, what different diseases affected the strawberry and how to treat them, and how to harvest the crop, and something about marketing the fruit."

That is a decidedly large assignment, but I shall essay to touch each of the points named without, of course, going exhaustively into the subject. In the first place, it is well to consider the fact that Oregon is a far cry from Michigan, and that the same methods which may properly obtain in Michigan would not be strictly followed under the peculiar conditions of soil and climate that are found in the Pacific Coast country. Therefore, what is said here will have to do with conditions as they are found in the territory, generally speaking, east of the Rocky Mountains, and will be modified to suit the conditions of the individual grower outside of the section named.

The first step toward successful strawberry production is pure-bred, vigorous plants, having a tendency to large yields of high-quality berries. If good plants were offered at \$10 per thousand and poor plants were offered for the digging of them, the latter would be the more expensive of the two. This is not peculiar to strawberry plants, for the orchardists of the Pacific Coast country, as well as in all other countries, have discovered that to set out poor stock represents a tremendous economic loss, and very frequently results in bankruptcy of the man who sets out the poor stock. Having secured good plants, the strawberry grower has taken the initial step toward large success. Under conditions which obtain throughout the greater part of the Pacific Coast country, almost any variety of strawberries will yield large quantities of fruit. But among those which have made extraordinary large records are August Luther, Senator Dunlap, Wm. Belt, Haverland, Glen Mary, Brandywine, Pride of Michigan, Cardinal, Sample and Stevens' Late Champion, Clark's Seedling, or Hood River, as it is sometimes called, is perhaps the most popular variety in the Hood River and White Salmon districts.

One Oregon grower reports that he sold \$1,500 worth of August Luther berries from a single acre in one season; one California grower reports \$2,500 sales of fruit from two acres in one season, from

in these reports were thoroughbreds, and to that single fact may be attributed in large part the success these growers have made. Thoroughbred plants have the honor of having topped the Portland market in 1908 and 1909. This indicates quality of fruit as well as quantity in yield, and both of these are essential to the permanent success of the strawberry grower who expects to market his fruit.

Having plants of the high quality referred to here, the strawberry grower has every incentive to do his very best. And the next step is to secure the soil conditions essential to the development of the highest fruiting powers of these plants. As I have indicated above, almost any strawberry plant will grow almost anywhere. No other fruit is so ubiquitous as the strawberry. It peeps its head out from the Alpine snows with the first breath of spring, and it flourishes with great vigor in the sub-tropics. It is successfully grown in the heaviest of clay soils, although its natural habitat is sandy loam, or some other kind of friable soil. But whether the grower lives North or South, or East or West, he always may be sure of having an abundance of strawberries where plants and soil cultural methods are what they should be.

Answering the editor's question as to what the man who has planned to set out five acres to strawberries should do in this direction, I would say that the first step in soil preparation is to load the soil up sufficiently with plant food for the perfect development of the fruit-

Contents

GROWING STRAWBERRIES AND CARING FOR THEM, 15

ORCHARD PESTS—BROWN MITE AND RED SPIDER, 21

THE OLSEN FRUIT COMPANY, NORTH YAKIMA, WASHINGTON, 27

A PRACTICAL METHOD FOR TOP GRAFTING TREES, 29

CHARACTERISTICS AND HABITS OF THE BUD MOTH, 31

THE PREVENTION OF FROST INJURY IN ORCHARDS, 33

HOW CAN ONE MAKE A LIVING ON A SMALL TRACT, 35

LOS MOLINOS, TEHAMA COUNTY, CALIFORNIA, 36

mixed varieties; one British Columbia grower gathered 53,000 quarts of fruit from four acres in the season of 1908, and said that under a more perfect system of handling the fields he would have done still better. All the plants involved



FIGURE 1—A PROPERLY PRUNED PLANT



FIGURE 2—SETTING THE PLANT



FIGURE 3—THE PLANT PROPERLY SET

Copyright, 1909, by R. M. Kellogg Co.

ing powers of his plants. To do this in most sections means the use of large quantities of barnyard manure, and where this is obtainable nothing else will be necessary in most soils. Every dollar spent in this fertility will come back to the grower many times over. Haul out upon the field a sufficient quantity of manure to give every inch of soil a light cover. It should be distributed with a manure spreader if you would secure the largest results at the least expenditure of fertility. Where manure is spread thus thinly over the soil, there is no danger of making the soil too rich.

The next step is the breaking up of the ground, and a good farmer knows that it is a prime essential that the soil be broken to a uniform depth throughout. In breaking up your fields, it is impossible, of course, to avoid what is known as a "back furrow," but it is not impossible to avoid leaving unbroken this undesirable furrow, and this may be accomplished by throwing the first furrow back into its original place. This will doubtless leave a slight ridge, but there is no soil but what has been broken up by this means, and it may, therefore, be worked into a perfectly mellow state. The depth to which soil should be broken depends upon its nature and formation. In deep soil one may go as deeply as eight inches, but in shallow soils the depth should not exceed from four to six inches.

The nature of the soil must be considered also in the way in which it is

to be handled from the view-point of mechanical condition. In the case of sandy soils where particles are coarse, the surface should be rolled and thoroughly compacted before the plants are set, so that the plants may rest firmly in the soil. Care must be taken that the roots of plants have air, and nothing should be done that will interfere with their respiratory processes. It is quite as important, however, that they be not given too much air, and unless this loose, coarse soil is properly compacted, too much air will reach the roots of the plants. Not only are these suggestions intended for sandy soils, but for any of the light soils, such as obtain in so many sections of the Pacific Coast country.

Clay soil should be given just the reverse treatment. Clay, by its nature, is compact, and it is one of the points which all soil culturists who work in clay soil must meet, namely, the preservation of the circulation of air at all times. Therefore, instead of rolling the clay soil to make it compact, as in the case of light and coarse soils, it is necessary that the clay soil be constantly stirred while the plants are growing, in order that the processes of decay of plant-food materials in the soil shall be normally maintained. It follows naturally, therefore, that cultivation of clay soil will be deeper than that of sandy soils, and it is our experience that four inches is none too deep. In cultivating, care must be taken, of course, to see that the teeth of the cultivator do not cut the roots of the plants. We find

that the way to avoid any trouble of this kind is to have the two rear teeth of the cultivator, which, of course, come nearest the plant, from one to two inches shorter than the teeth which work in the center of the rows. Any blacksmith will shorten the teeth to suit one's particular requirements. Where the soil is heavy, go over it with a five-tooth cultivator as frequently as once every two weeks.

In the consideration of soils, however, let it be remembered that so much does not depend upon the nature of the soil as it does upon the grower's proper handling of the particular soil in which he is working. Have a care also that no work is done in wet clay soil either before or after plants are set, until the soil is once more in a "crumbly" condition and forms a soft, grainy surface.

Few fields of growing things are more beautiful than one given over to strawberries, where the strawberries are set out in straight rows and are given the attention their importance merits. Every grower, therefore, should take a pride in seeing that his plants are set out properly. This is a very simple matter, but it is necessary, before beginning the work of setting out the plants that the rows in which they are to be set are distinctly marked out. A very simple device is made by taking a piece of scantling six feet long; cut it into thirds, sawing diagonally so as to leave each piece the shape of a sled runner. Then take an inch-thick board four inches wide, and if the rows are to be set three



M. C. JENKS' TEN-YEAR-OLD ORCHARD, ALBANY, OREGON



TWIN FALLS, SOUTHERN IDAHO. ONE OF THE GREAT WATER POWERS. WATER USED FOR IRRIGATION

Courtesy Oregon Short Line Railroad Company

feet apart, the board should be six feet long. To either end spike a runner, a third runner being directly in the center, and you will have as perfect a marker as is necessary to do the work. Attach a chain or rope to this runner, keep a sharp eye upon some given point at the end of the plat toward which you are drawing the marker, and the rows will be ideally straight.

With the soil in condition and properly marked out, and the plants in hand, the next step is the pruning of the plant. Some people insist upon setting the plant just as it comes from the nursery. This is a great mistake, for no plant is properly ready for setting until it is pruned. Pruning involves the cutting off of nearly all of the foliage of the plant and cutting back about one-third of its roots. When the roots are thus cut back the wound quickly callouses, and numerous small feeders at once start into growth and go to feeding upon the plant food in the soil. Any one with a sharp pair of shears can do the work of pruning and do it very rapidly, and the results which follow from pruning are valuable beyond estimate.

In setting them out, great consideration must be given to the sex of the plants. Nicholas Longworth, who was one of the pioneers of Ohio, was the discoverer of the fact that sex in plants is quite as distinct as it is in animals, and the strawberry grower who fails to

observe this fact in practice is doomed to bitter disappointment. Various terms are used to describe the differences in sex. The male plant is variously called bisexual (because it really is bisexual and is self-propagating and self fruit-producing); it is a staminate and also is called perfect-flowering. The female plant is designated as imperfect-flowering and is a pistillate. Let it be understood at the outset that male plants may be grown successfully without mating, although our experience has taught us that even male plants are benefited by an exchange of pollen with other male plants. But the pistillate plant will not fruit without being mated with a male or bisexual or staminate variety. The pollen of the staminate, when it bursts forth from the anthers, will spread for a considerable distance, and it is perfectly safe to set three rows of pistillate plants between two rows of male plants. The effectiveness of this method, however, will be increased by setting on one side of the rows of pistillates an early bisexual, and on the other side a late bisexual, so that both the early and late bloom of the pistillate variety may become impregnated by the earlier and late pollen of the flanking male varieties. For instance, suppose the grower has 100 August Luther, 300 Haverland and 100 Pride of Michigan, and his rows are 100 plants long. Row No. 1 will be set to August Luther,

rows 2, 3 and 4 to Haverland, and row No. 5 to Pride of Michigan. This would secure the perfect pollination of the Haverland variety, and every bloom of the entire five rows should yield a perfect berry. Of course, one may set but one row of pistillates if desirable, or two rows, but as many as three rows will thus be perfectly fertilized when set as above indicated.

We have now reached the point where we are to begin the work of setting the plants into the soil. This is a very simple operation, and to one who is practiced in the work, a very rapid operation. One never should go into the field to set plants in his Sunday-go-to-meeting clothes, for in doing this work he comes into actual contact with Mother Earth, and would be likely to spoil a good suit. Before going into the field, the setter should pad his left knee with a piece of gunny sack or some similar material, so that he can get right down to the work in hand. The best implement to use in performing this work is a dibble, made of steel, which the setter thrusts into the soil to a depth of about six inches, pressing it from him to make an opening, and holding it in that position so that the dirt will not fall back into the opening. Holding the soil thus, he seizes a plant in the left hand, shakes it vigorously so that the roots will be spread out and sets it down into the soil, holding the crown so that it will

be on a level with the surface of the ground when the setting is complete. Then withdraw the dibble and plunge it into the soil about two inches from the opening, to force the soil against the plant, while with the left hand he presses to soil against the plant from the other side. I have seen trained setters put out more than 2,000 plants a day. Carry the plants in a basket partially covered, to protect the plants from the action of the air, pushing the basket before you as you move down the row. In this way your field will be quickly set and, if these instructions are carefully observed, it will be perfectly set.

In setting out plants in sections where irrigation is followed, the better plan to follow is to make a trench or deep furrow and turn on the water, letting it run until the ground is filled to its full capacity. Then, when the water has settled out of sight, take the plants and laying them on one side of the open furrow, draw the earth from the other side about the roots clear up to the crown, pressing the earth about them as described above. Then turn on the

water once more, this time running it in the furrows in the center of the spaces between the rows of plants, allowing the water to seep thence to the roots of the plants.

Just as soon as the plants are fairly set in the ground cultivation should begin and be repeated every eight or ten days thereafter, and always after a rain or irrigation. Be careful, however, that the work is not done too soon after the rain. Before cultivating all the rainfall or water from irrigation should have settled into the earth and the surface become "crumbly." On the other hand, the grower must be careful not to wait until crust has begun to form. The formation of the crust means the setting up of capillary action, which results in the rapid evaporation of the water from the soil into the air. The surface of the ground should always be covered with fine particles of dust, which break up this capillary action and thus conserve the moisture in the soil. Another valuable element in cultivation is the fact that where intensive cultivation is practiced, constant supplies of plant food are brought to the roots of

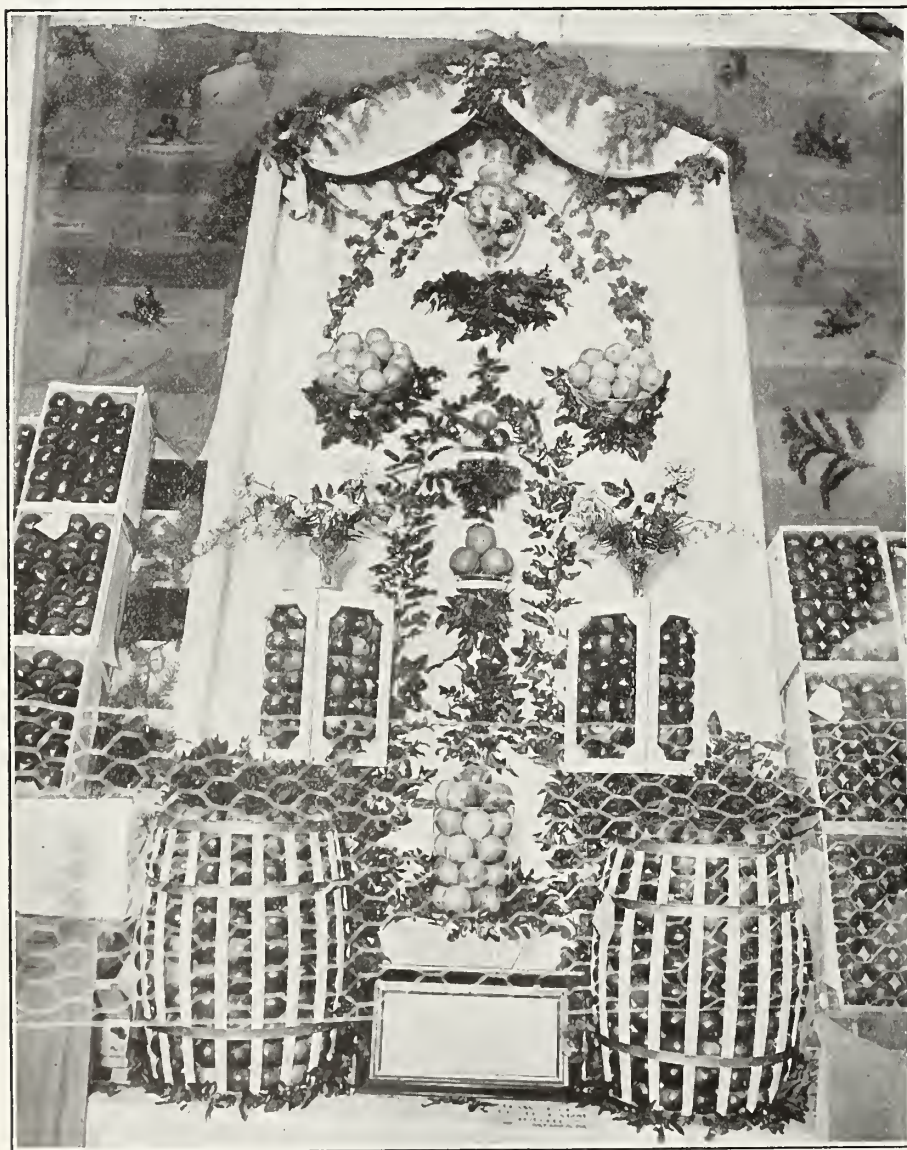
the plants and rapid and continuous development of the plant's fruiting powers is thus insured.

The grower must note the effect of cultivation upon his plants. Over-feeding encourages excessive foliage, for instance, and as soon as the grower discovers a tendency of this sort he should reduce the frequency of cultivating until the foliage takes on a more normal development. This tendency is noted particularly in some varieties, while other varieties will endure almost constant cultivation and thrive under it. One of the pleasures of fruit growing, and it is especially marked in strawberry culture, comes from the study of the nature of different plants and practicing just those methods which will produce the right results in the several varieties grown.

The hoe is an essential in the strawberry field, and where this is intelligently wielded, plants are constantly surrounded by soft, friable soil filled with plant food which is rendered more readily available by the changes in the soil's mechanical condition thus made. Hoeing keeps down the weeds, which are greedy feeders of the elements which should go to support the strawberry plant and produce large quantities of fruit. Too much attention cannot be given to this branch of the work.

It is remarkable how soon after the plants are set that they begin to multiply runners. Just what the grower shall do with the first few runners is determined by the system he has decided upon. For instance, if he intends to cultivate by the hill system, he will pinch off all runners as fast as they appear. If he purposes to grow the plants by the single-hedge row he will allow two runners to form, and pinch off all the remaining runners, and will lay these two runners directly in the row with the mother plant, one to be at one side and one on the other. If he decides upon the double-hedge row for his system he will permit four or six runner plants to develop and will layer them in a zig-zag fashion. In any event, he will pinch or cut off all runners in excess of the number he has determined upon, and the layering should be done with an eye to the amount of room which each individual runner plant is to have in which to develop itself and its crop of fruit.

One important matter to be considered at this time is the condition of the mother plant. If the mother plant be strong and vigorous, she may be permitted to develop the first runners that form. If, however, she indicates signs of weakness, it is better to allow her to develop her own strength before attempting to propagate runners. Every runner plant that is allowed to grow to a certain degree draws upon the vitality of the mother plant. This is indicated very clearly by the way in which plants under the hill system develop great roots and crowns, and yield tremendous crops of fruit. However, the commercial strawberry grower cannot consider the hill system, as it involves too much personal labor to care for the



HAWKEYE FRUIT FARM, SOUTH MORAN, WASHINGTON, EXHIBIT AT NATIONAL APPLE SHOW, SPOKANE, 1909

R. M. KELLOGG COMPANY, THREE RIVERS, MICHIGAN

plants, and extensive growers of strawberries find the double-hedge row the one most satisfactory from the viewpoint of quantity of yield and the size of the berries. Matted rows, while yielding a very large quantity of fruit, do not develop the large and beautiful berries that may be developed under any one of the other systems—the single-hedge, double-hedge or the hill systems.

Not long after the plants commence to develop and when the warm days of late spring have come, the young plants will manifest their energy by developing fruit buds and bloom. But the strawberry plant should be considered as being somewhat in the nature of a fruit tree, and like the fruit tree, must be given some time in which to develop sufficient strength for the production of great crops of fruit. Therefore, it is always wise to pinch off all bloom as fast as it appears upon the young plants, and permit no fruit whatever to be developed from the first set of blooms that appear upon the plants. It may be set down as a rule, from which there will be few exceptions, that the strawberry plant which has been compelled to endure the shock of transplanting and is allowed to fruit its first bloom will never attain its greatest fruiting powers. It is of highest importance, then, that the first bloom be carefully plucked from all plants if the grower would secure the largest possible results from his plants. Be very sure to pinch off every bud before it opens, as this will insure your young plants against pollen exhaustion. Pollen exhaustion always results in a yield of fruit deficient in both quantity and quality.

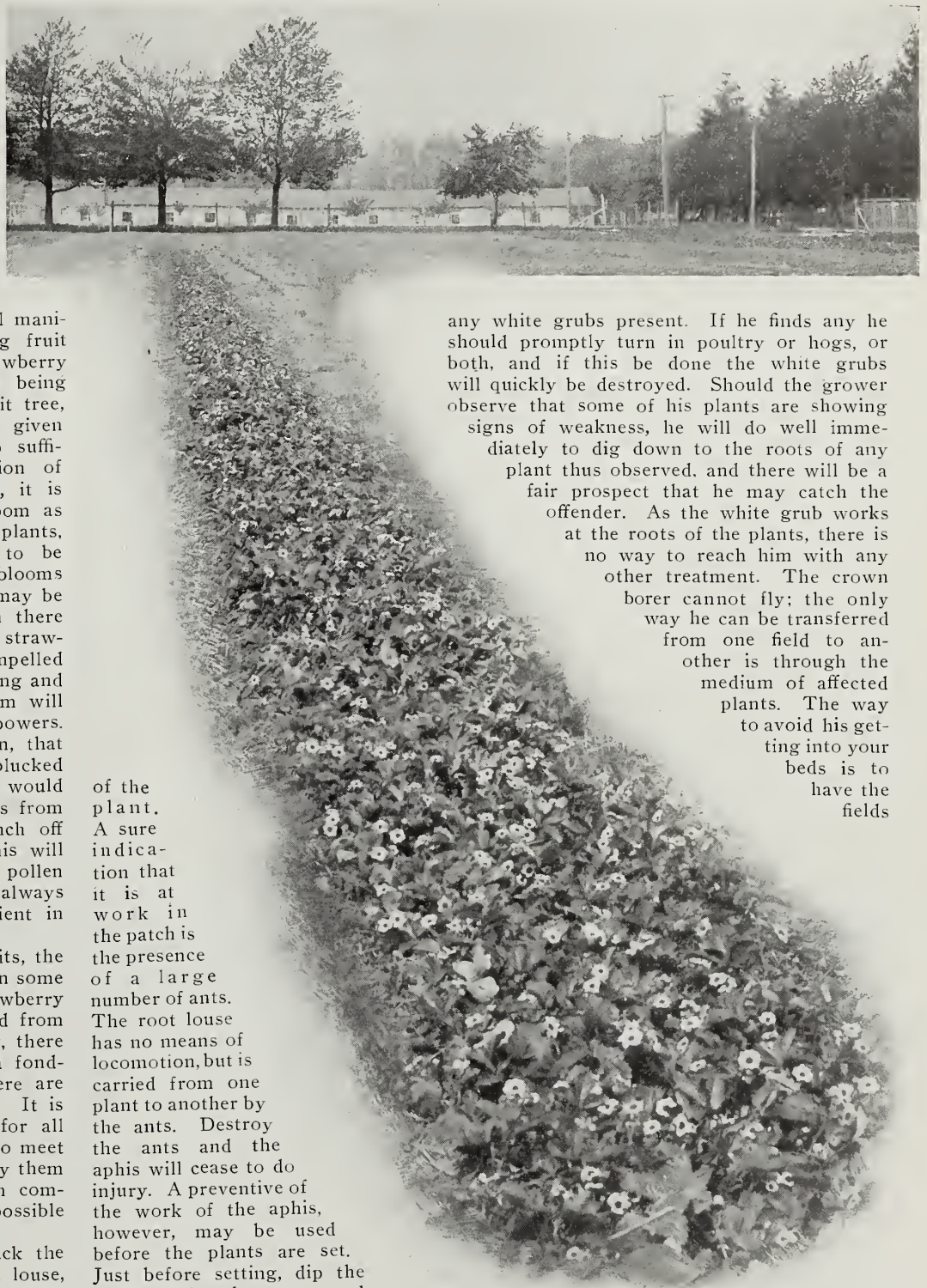
Compared with many other fruits, the strawberry has few enemies, and in some sections of the country the strawberry grower is almost entirely relieved from anxiety in this regard. However, there are certain insects which have a fondness for the strawberry, and there are fungous diseases which attack it. It is the part of wisdom, therefore, for all growers to be ready at any time to meet these enemies and to either destroy them utterly or keep them under such complete control as to make it impossible for them to do serious damage.

Among the insects which attack the strawberry are the aphid or root louse, the strawberry beetle, the leaf roller, the strawberry slug, the saw fly, the crown borer, the crown miller and the white grub. Some of these are found in some sections of the country and some in other sections; some of them will develop under certain weather conditions, or remain completely dormant where conditions do not encourage their appearance or multiplication. In the case of the beetle, the leaf roller, the slug and the saw fly the treatment is arsenate of lead or paris green, with either of which the plants should be sprayed as frequently as every ten days after their presence is discovered. The aphid or root louse works at the roots

of the plant. A sure indication that it is at work in the patch is the presence of a large number of ants. The root louse has no means of locomotion, but is carried from one plant to another by the ants. Destroy the ants and the aphid will cease to do injury. A preventive of the work of the aphid, however, may be used before the plants are set. Just before setting, dip the roots of the plants up to the crown in strong tobacco tea. This tea is made by boiling one pound of tobacco stems in five gallons of water for twenty minutes. When this tea has been cooled, dip the plants as described. The tobacco is so offensive to the aphid that it will not work upon roots thus treated.

The white grub is one of the most serious menaces to the strawberry, as the roots of the plants are his especial delight. In this case, prevention again is better than cure, and the grower should be very careful when he is plowing in the field in which he intends to set strawberry plants to note if there be

any white grubs present. If he finds any he should promptly turn in poultry or hogs, or both, and if this be done the white grubs will quickly be destroyed. Should the grower observe that some of his plants are showing signs of weakness, he will do well immediately to dig down to the roots of any plant thus observed, and there will be a fair prospect that he may catch the offender. As the white grub works at the roots of the plants, there is no way to reach him with any other treatment. The crown borer cannot fly; the only way he can be transferred from one field to another is through the medium of affected plants. The way to avoid his getting into your beds is to have the fields



Copyright, 1909, by R. M. Kellogg Co.

KELLOGG'S THOROUGHBREDS IN BLOOM

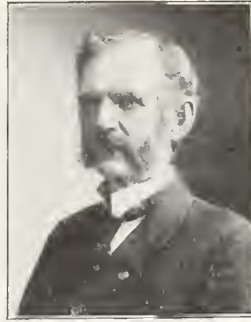
perfectly clean and free from old plants before setting new ones. If the fields are affected by the crown miner, the only thing to do is to burn over the fields just as soon as the crop is picked. No other remedy has as yet been discovered for this pest. However, the crown borer and the crown miner are very infrequent visitors to the strawberry patch.

There are several fungous diseases which affect the strawberry plant. These depend very largely for their spread

upon the weather conditions. Mildew, blight and rust—all are readily checked by proper spraying with bordeaux mixture, made according to the following formula: Four pounds lime slaked in four gallons of hot water; four pounds blue vitriol thoroughly dissolved in four gallons of water; to this add sufficient water to make one barrel of forty gallons. Where both fungous growths and insect pests affect the plants, paris green (or arsenate of lead) may be added to the bordeaux mixture and applied at one spraying.

The importance of prevention, both as respects insect pests and fungous diseases, cannot be too strongly emphasized. Clean cultivation, no dirty fence corners, no weeds—nothing that will afford a place of residence for insect pests—should ever be permitted near a strawberry field. This kind of cleanliness will have an important effect in many ways in keeping the fields free from dangers of this order.

In many sections of the Pacific Coast country mulching as a protection from frost and the effects of frost, is unnecessary. But whether one considers mulching from the viewpoint of severe weather or not, he is compelled to consider it from the viewpoint of clean and beautiful fruit. It is a practical impossibility to grow clean, fine fruit for the market without mulching the field. In the North, where frosty days and frostier nights come in the fall and linger with



RUSSELL M. KELLOGG
Founder



FRANK E. BEATTY
President
America's Greatest
Strawberry Expert



W. H. BURKE
Secretary and Treasurer

THE R. M. KELLOGG COMPANY, THREE RIVERS, MICHIGAN

Copyright 1900, by R. M. Kellogg Co.

increasing chill throughout the long winter season, mulching is an absolute necessity for the reason that it prevents alternate freezing and thawing which, if permitted, will cause the earth to heave and break off the roots of the plants, thus weakening them and frequently destroying their usefulness. In the North, therefore, the mulching should be applied after the first severe freeze, and allowed to remain until thawing weather begins in the spring. Usually it is well to cover the field to a depth of about two inches with straw, although directly over the plants themselves a less amount of straw will serve. In the

South and in the Pacific Coast country where frosts do not affect the plants, straw or other form of mulching should be placed between the rows of plants and close up under the foliage, so that the ripening fruit may rest upon a clean carpet and thus go to market sweet, clean, wholesome and attractive.

The range of materials used is a broad one. All of the straws—wheat, oats, rye and buckwheat, are excellent. Marsh hay answers very well. Along the Atlantic Coast seaweed is very generally used for this purpose, and in the South pine needles make the clean carpet upon which the Southern crop of strawberries are ripened.

After the first crop of fruit has been harvested the vines should be mowed off close to the ground. If the fields be extensive, use a two-horse mowing machine. Where a small field only is devoted to strawberries, the scythe will answer very well. Then, after the vines have become dead and dry, take a forkful of straw, go to the side of the patch from which the wind is blowing, set the straw on fire and walk along the entire side of the field holding the forkful of burning straw close enough to the ground to set fire to the mulching. The wind will carry the blaze so quickly across the field that it will consume all the old waste material, as well as weed seeds, insects and fungous spores, without in the slightest degree injuring the plant crowns. Of course, this work must not be done unless the field is dry, and if a rain has fallen since the mowing over of the patch, be very careful and do not do the burning until it has become thoroughly dry. And if it does not dry thoroughly, then make no attempt to burn over the field.

To be continued in May edition



Copyright 1900, by R. M. Kellogg Co.

HOW R. M. KELLOGG COMPANY KEEP VARIETIES TRUE TO NAME

This photo-engraving shows us taking the mother plants from the breeding bed for further breeding and propagation. The foliage is so large that the division between the plants taken from different mother plants is hardly visible. You will note to the right the mulching lies in winrows which has been raked off of the rows we are digging, and on the stakes you will note the number representing the mother plant which produced these plants. You will also note the men in the rear pruning the plants before they go into the crates. This crate represents our method of carrying plants from the breeding bed to the propagating bed. The tag on the crate bears the name of the variety, and you will note the lid shades the plants from the sun. Our method of growing the plants, digging and transferring them to the propagating bed precludes any possible danger of getting varieties mixed. We would not be afraid to offer to pay any one's expenses to this farm from any part of the United States or Canada and allow him ten dollars a day for his time if he can find a single stray plant mixed with any variety. Every variety is absolutely pure and true to name

ORCHARD PESTS—BROWN MITE AND RED SPIDER

BY GEORGE P. WELDON, FIELD ENTOMOLOGIST COLORADO AGRICULTURAL COLLEGE

THE dry climate of Colorado favors the multiplication of mites, among the more common and troublesome of which are the two species treated in this bulletin. Throughout the year these two species have been found quite generally distributed in the orchard sections of the Western Slope, and in some localities their injury to fruit trees was quite severe. Very often both species are found on the same tree, and no little confusion exists among orchardists in separating one from the other.

Because of the prevalence and severity of these pests it was thought best to carry on some experiments to determine how they may best be controlled. The results of these experiments, along with a general discussion of the life histories of the two species of mites, are given in this bulletin.

The mites are not true insects, having eight legs when adult. They are classified as an order of the Arachnida, to which class the spiders belong.

THE BROWN MITE

Bryobia pratensis Garman. Plate I, Figure 1

Life History—There are three distinct stages in the life cycle of the brown mite. Beginning with the egg, a short account of each stage follows:

Most orchardists have seen the tiny red, globular eggs on fruit trees during the winter months, and are aware that they are the eggs of the brown mite. The winter is spent principally in the egg stage in Colorado. The over-winter eggs are deposited before the end of the summer season. This year practically no living mites could be found after the first of August at Grand Junction or Delta, the eggs having been deposited previous to that date. On August 16 an occasional specimen of this mite can be found, but they are very rare, and no more damage need be expected of them this season. The eggs are usually deposited on the trunk and limbs of trees, the crotches being favorite places. (See Figure 7.) Often the bark is covered several layers deep with these eggs. By rubbing one's finger over the egg masses and crushing them, the bark of the tree may be made to assume almost a blood red color. We have found these eggs more numerous on pear, cherry, plum, prune, and almond than on any other orchard trees, the degree of infestation corresponding to the order in which the trees are named. Shortly after the warm weather of spring comes on, the tiny little bright red, six-legged mites may be seen crawling over the leaves and branches. By the first of May they were abundant the past season at Delta, Colorado. Their color remains red until after they moult for the first time, when they are a brownish, or often an olive green color. After this moult they have eight legs, instead of six, which remain with them throughout life. The adult (Plate I., Figure 1) is brown in color, with the exception of the legs and head, which have a reddish hue. The front pair of legs is very long, and are constantly

kept in motion when the mites are feeding, as though they used them to feel their way about on the surface of the leaves. Throughout the months of May, June, and July adult mites are depositing eggs, which may constantly be found on infested trees. If the infestation is severe, not only are their eggs deposited on the bark, but very often a few are deposited on the leaves. They have been noticed principally upon the upper surface, and in the furrow of the mid-rib.

While it is very hard to determine whether or not there is a definite number of broods of this species of mite,

observations the past season strongly indicate that there are but three broods.

Nature and Appearance of Injury—The direct injury from brown mite is confined principally to the foliage. They have been observed feeding upon fruit, and not infrequently have we seen masses of them collected upon the stems where they appeared to be feeding. It is probable that the stems are used mostly as a moulting place. The epidermis of a leaf is pierced by their mandibles and the sap sucked from within. The first sign of infestation of a tree is the pale color of the leaves, not

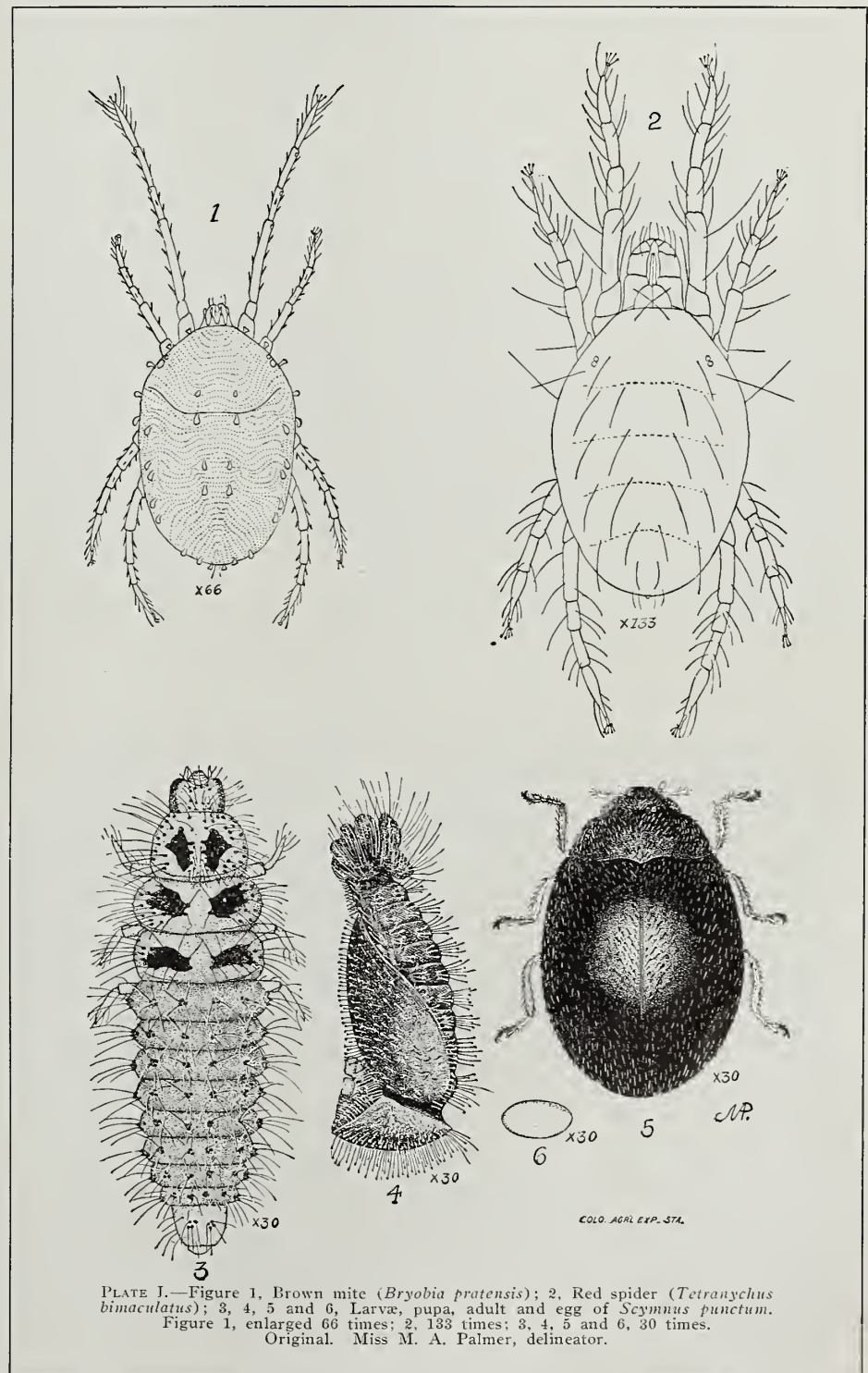


PLATE I.—Figure 1, Brown mite (*Bryobia pratensis*); 2, Red spider (*Tetranychus bimaculatus*); 3, 4, 5 and 6, Larva, pupa, adult and egg of *Scymnus punctum*. Figure 1, enlarged 66 times; 2, 133 times; 3, 4, 5 and 6, 30 times. Original. Miss M. A. Palmer, delineator.

unlike that caused by leaf hoppers; when not abundant there may be only a few leaves affected. They generally attack the lower leaves first, and unless conditions are favorable to their increase, they may confine themselves largely to the water sprouts and tender twigs at the crotch of the tree. When multiplication is uninterrupted, they may cover the foliage of an entire tree, causing it to turn yellow and drop prematurely, thereby materially weakening the vitality of the tree. Little black specks, the droppings of the mites, render the fruit and foliage unsightly, and while there may be no serious consequences from this source, it probably does sometimes interfere with the looks of a fancy pack of early fruit. Often the fruit of a badly infested tree is small and does not mature properly.

Trees and Plants Infested—The brown mite does not confine its attack to trees, for it was first described as a clover pest. Neither does it confine its attack to orchard trees, for shade trees have been reported infested by them. During our observations of this mite we have not found it on any of our shade trees. Much has been written about it as a household pest, but it seldom, if ever, becomes of any serious consequence in Colorado, where it winters mostly in the egg stage. In the warmer sections of the United States it is said to hibernate as an adult, often migrating into the houses in the fall, where it may trouble the housewife. During the present season they have been found on apple, plum, prune, cherry, pear, peach and almond in abundance. Probably less were seen on peach than any other of these trees. Only in one section were they observed to be of any serious consequence on peach. So common are they on all other kinds of trees mentioned that it would hardly be safe to say that they are more liable to attack one than another. An infested apricot, or quince tree has not been observed.



Remedies—The following experiments were conducted the past summer to determine which of the insecticides used would best control this pest, the applications being made as a spray, except No. 6:

May 4 and 5, Experiment No. 1—Sulphate of nicotine, eight ounces to fifty gallons of water.

May 4 and 5, Experiment No. 2—Nicotume, nine ounces to fifty gallons of water.

May 4 and 5, Experiment No. 3—Nicotume, six and a half ounces to fifty gallons of water.

May 4 and 5, Experiment No. 4—Black leaf, one part to seventy parts of water.

June 4, Experiment No. 5—Flowers of Sulphur, one pound to three gallons of water.

June 4, Experiment No. 6—Flowers of sulphur as a dust spray.

July 23, Experiment No. 7—Flowers of sulphur, sixty-five pounds to 200 gallons of water and two pounds of whale oil soap.

July 27, Experiment No. 8—The same spray used as in No. 7.

Experiments 1 to 6 inclusive, were conducted by myself. No. 7 was conducted as recommended by me, and No. 8 under my supervision.

Nos. 1 to 6 were in the orchard of Mr. W. E. Obert at Delta; No. 7 in the orchard of Mr. McCarry at Grand Junction, and No. 8 in the orchard of Mr. C. D. Gehman at Grand Junction. Thanks are due these gentlemen for their assistance in the work.

The sulphate of nicotine and nicotume are tobacco preparations manufactured by the Kentucky Tobacco Product Company, at Louisville. The black leaf is also a tobacco preparation manufactured by the same company. All the tobacco sprays were found to be effective in killing the mites touched by them, but apparently had no effect upon the eggs. An examination of the trees twenty-four hours after spraying showed that many of the adult mites had not been killed. It is next to impossible to do a thorough enough job with any spray which will only kill the mites, to sufficiently hold them in check so that they will not damage the trees, as they hide in cracks of the bark, under bud scales, and in so many other places where it is impossible to reach them. A later examination of the trees showed that the eggs were hatching in abundance, and that the adult mites were also abundant. Any spray that will not kill the eggs, and which will not adhere to the foliage until the eggs hatch, is not a practical summer spray for brown mite. If it were possible to do a thorough enough job to kill all mites when the spray is applied and then make a second application later when all the eggs are hatched, that would be effective. Owing to the fact that it is practically impossible to kill all of both eggs and mites, and that the time of hatching of the eggs seems uncertain, the best that could be expected of tobacco sprays would be to keep the mites in check by repeated applications throughout the season. In the use of sulphur the experiments indicate that we have an absolute remedy for this pest.

In experiments Nos. 5 and 6 four small, badly infested cherry trees were treated, two sprayed with a compressed aid hand pump and two dusted with a bee smoker. It was found that by using a small amount of soap in the water sulphur would mix nicely, so that there was no trouble in applying it as a liquid spray. The best time to apply the sulphur in the dry form would be in the early morning, or late in the evening, when the dampness would cause it to adhere to the foliage. In experiment 6

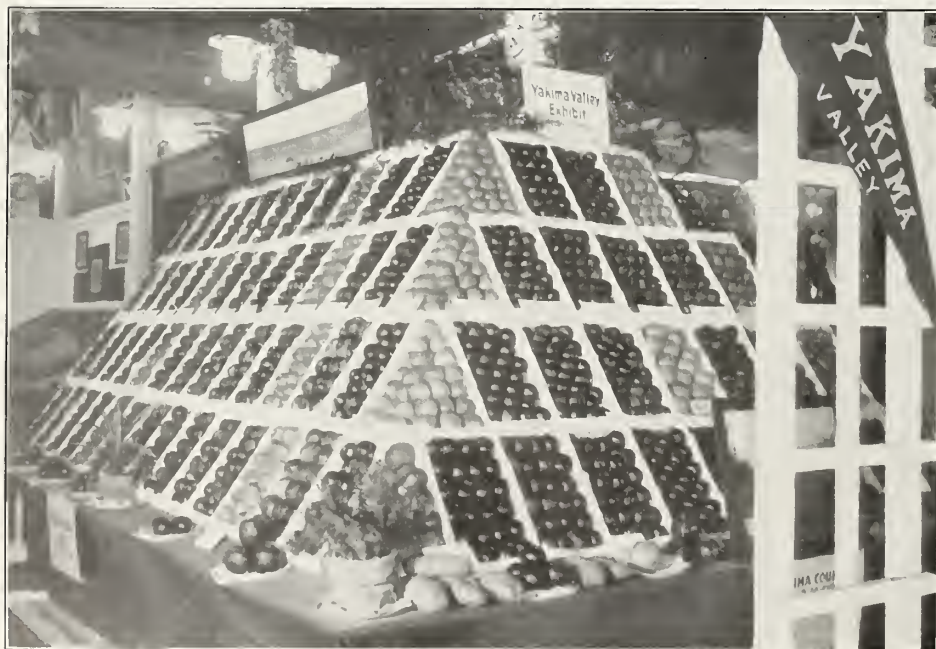
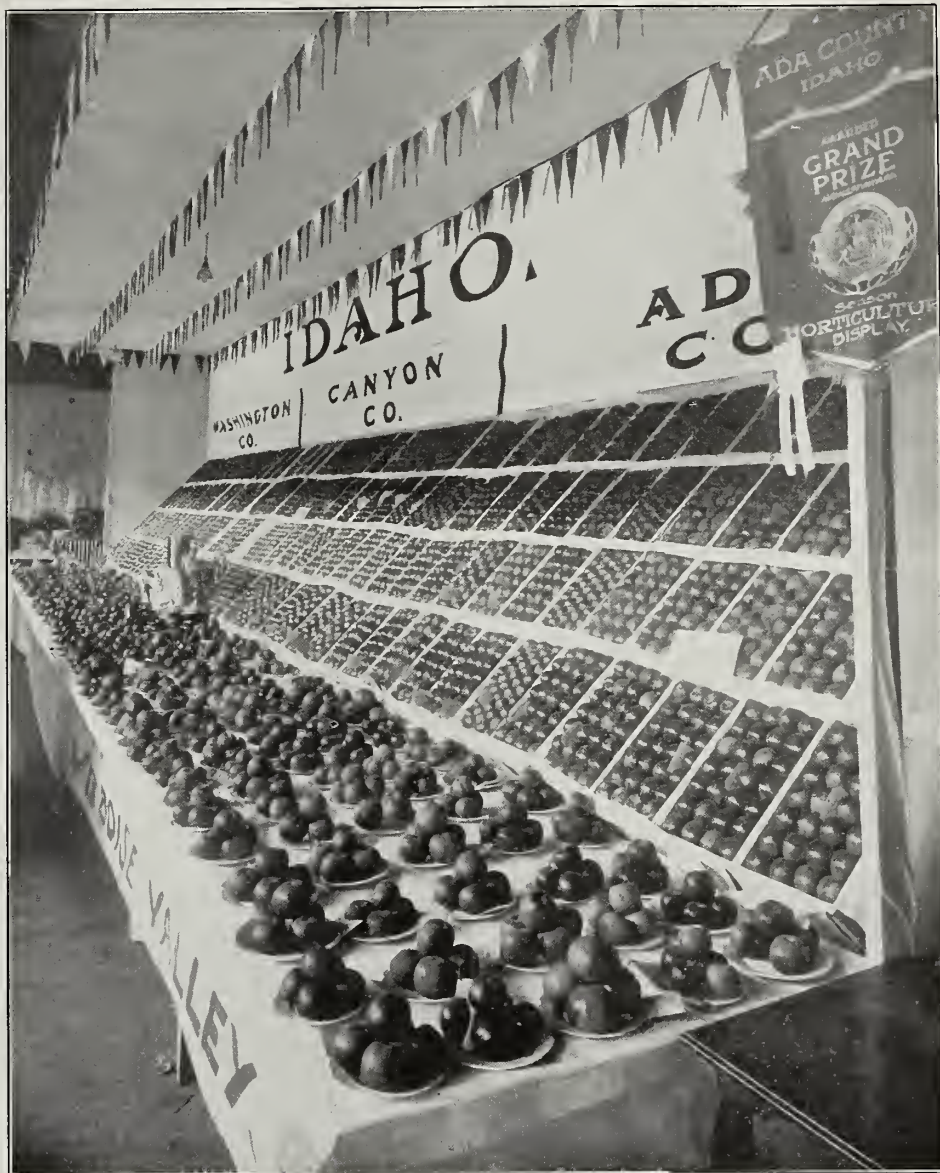


EXHIBIT MADE BY THE YAKIMA VALLEY, WASHINGTON, AT NATIONAL LAND AND IRRIGATION CONGRESS, CHICAGO, NOVEMBER, 1909

sulphur was applied as a dust spray, and enough was used so that every leaf received a coating. An examination of trees was made June 7, and to my surprise, not a single adult mite could be seen; there were, however, many of the newly hatched ones. An examination of these trees again June 9 showed the same conditions. On this date a very careful examination was made of egg masses on check and treated trees. The egg masses (Figure 7) are favorite places for the mites to moult, and along with those that are depositing eggs there are always many to be found there in abundance. Twenty-five separate egg masses on sprayed trees were examined with a hand lense and not a single adult mite found. Every egg mass examined on check trees in the same row had from one to a great many mites crawling about over it. The foliage of sprayed trees recovered its normal green color, and remained so throughout the season, standing out in beautiful contrast to that of the untreated trees, many of the leaves of which turned yellow early in the season. Not only was there a difference in the foliage, but the fruit also showed a marked difference, that from check trees being small and worthless, while that from treated trees matured well and was good.

Experiment No. 7 showed just as conclusive results. The 300 pear trees in this experiment began to pick up immediately after spraying, and an improvement in the fruit was soon apparent. The only trouble in this orchard was that the spraying was neglected until too late, as much damage had already been done. An examination a few days after the spraying showed that treated trees were free from mites, while some plum trees in the orchard, which were left untreated, still had many of the mites on the foliage. As the infestation of mites on the pear trees was serious, it is probable that the spray paid for itself, even though it was late before the application was made. Spraying in this experiment was done with a gasoline power outfit. Previous to the time of spraying this orchard with sulphur,



FIVE BOXES COMMERCIAL PACK IN THIS EXHIBIT WON "BETTER FRUIT" CUP AT THE NATIONAL HORTICULTURIST CONGRESS, COUNCIL BLUFFS, IOWA, NOVEMBER 1909, BY CANYON, WASHINGTON AND ADA COUNTIES, IDAHO

a black leaf-spray was used with very little success.

In experiment No. 8 twelve cherry and two plum trees were used. The mites

were completely exterminated from these trees. One cherry tree was left as a check, and an examination of the trees ten days after spraying failed to reveal the presence of any mites on the treated trees, while on the one check there were still many of them.

I feel that the results of these four experiments with sulphur sprays are conclusive, and that it is perfectly safe to recommend a spray of flowers of sulphur and water for brown mite. While sixty-five pounds to 200 gallons of water were used in these experiments, it is probable that fifty pounds would be enough. A small amount of soap must be used so that the sulphur will mix with the water. If soap is not used the sulphur will remain on the surface and no amount of agitation will mix it. Two pounds of soap to 200 gallons of water is plenty, and probably less will answer the purpose.

Professor Gillette has found that a soluble oil spray is more effective in killing the eggs than are the tobacco sprays. In the case of the mites themselves this was reversed, and tobacco preparations were the more effective. While soluble



CORNER OF WENATCHEE, WASHINGTON, DISPLAY AT THE NATIONAL LAND AND IRRIGATION CONGRESS, CHICAGO, NOVEMBER, 1909

oil might be successfully used as a dormant spray, it is not a reliable remedy where water is strongly alkaline, and if such water is used a thorough mixture cannot be maintained with any of the different brands of soluble oil that the writer has tried to use. Because of this fact none of the soluble oil sprays were used in the experiments.

It has been determined that lime and sulphur, applied when trees are dormant will kill mites. Professor Gillette has experimented with the lime and sulphur sprays upon the eggs of the brown mite and has concluded that they are of no value as far as the destruction of the eggs is concerned. Their efficiency seems to depend upon their power to kill the young mites after they hatch from the eggs. Lime and sulphur is very adhesive, and the sulphides of lime will remain on a tree for months after the spraying has been done. Especially is this true in Colorado, where the rainfall is not great.

SUMMARY

1. The brown mite has been quite a serious pest in Colorado the past season, doing considerable injury to orchard trees, as well as interfering with the maturity of the fruit.

2. The over-winter eggs are deposited in late summer, most of them before the first of August this season; they remain on the trees throughout the winter and hatch shortly after the leaves come out in the spring.

3. Apple, peach, plum, cherry, pear and almond trees were found infested. Apricot and quince do not seem to be troubled.

4. Mites feed principally upon the foliage where their presence may be noted by the pallied leaves and the tiny black spots of excreta.

5. Flowers of sulphur, one pound to

three gallons of water, and enough soap so that the sulphur will mix with the water, is a perfectly effective remedy when used as a summer spray.

6. Tobacco preparations will kill the mites but not the eggs, and are only effective when repeated applications are made. Oil sprays seem to penetrate the eggs and destroy them better than the tobacco extracts, but are unsafe to use with water strongly impregnated with alkali.

7. Trees may be treated while dormant with lime and sulphur. This spray has no effect upon the eggs, but probably kills the young mites as they hatch.



CHERRIES FROM LINN COUNTY, OREGON

THE RED SPIDER

Tetranychus bimaculatus Harvey. Plate I, Figure 2

Although there are a number of different species of red spiders, or spinning mites, we have found only one species infesting orchard trees in Western Colorado. While in most localities it was probably not responsible for as much damage as the brown mite, still it was of somewhat serious consequence, and is a pest to be watched, and combatted if necessary, to keep it from becoming injurious the coming season.

Life History—Both species of mites treated in this article belong to the same family, but differ from each other in many important respects. The eggs of the red spider are deposited chiefly on the under surface of leaves. An examination of infested trees will reveal the presence of these tiny, transparent eggs, resembling minute dew-drops attached to the surface of a leaf, or interwoven among the silvery threads which the mites are capable of spinning. As is the case with the brown mite, these have only six legs when first hatched, the fourth pair developing later. The adult (Figure 2) is somewhat smaller than the adult brown mite and the fore pair of legs are much shorter, as is shown in the figures. When the mites are seen with the aid of a glass upon the surface of a leaf the legs appear much shorter than they do in the drawing, for the reason that they are not extended to their full length while the mites are feeding, or while at rest, while those of the brown mite are nearly always extended to their full length. A glance through any ordinary hand lens is all that is necessary to be able to distinguish the brown mite from the red spider, because of this characteristic. When first hatched this species of red spider is light green, with small dark colored spots on the back. Later the color may change from a light green

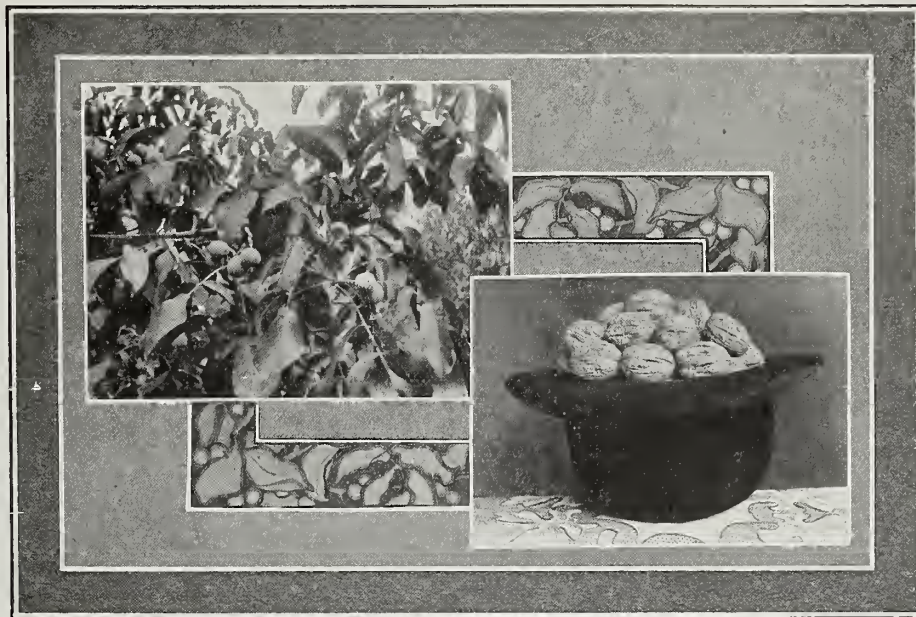


L. C. STRATTON ORCHARD, ALBANY, OREGON

to a deep brown or a bright red. Owing to the variability of color this character cannot be depended upon at all in the identification of the species. The spots also vary in size and placing on different individuals. Generation after generation of the mites appear during the summer months, and at all times of the season there may be found eggs, and all other stages of the mites upon the leaves.

The winter is spent in the ground, and here we have an important difference in the life history of the two species treated in this article. On August 9, myriads of red mites were found in the ground at the crowns of trees upon which they had been feeding. At this time they were all red in color. Although most of them occurred close to the trunks of trees, some were found at a distance of ten feet away, where they had crawled beneath clods of soil, undoubtedly to remain over winter. It is probable that out of the large numbers that leave the foliage and enter hibernation quarters only a very few survive the winter. In the early spring, when the foliage begins to grow, these few crawl out of their winter quarters, ascend the trunks of trees and deposit their eggs for the perpetuation of the species. On last April 7 a number of these mites were found trapped in a "Tree Tanglefoot" band, which had been applied to the trunk of an apple tree to catch the migrating woolly aphids which wintered in the ground.

The Nature and Appearance of Their Injury—The injury from this species is similar to that of the brown mite. The leaves of an infested tree are often yellow in spots, which present a blister-like appearance. This condition has not been observed with brown mite injury, and is due to the red spiders spinning their webs over certain small areas of the leaves, and feeding within those areas.



ENGLISH WALNUTS, LINN COUNTY, OREGON

The webs are always found on leaves injured by red spider, and when the orchardist finds these webs he can rest assured that he has red spider to contend with, as the brown mite does not have the power of spinning a web.

Trees and Plants Infested—In every case, mite injury to shade trees observed the past season was due to this species of red spider, and not to the brown mite. It has been observed on the same fruit trees as the latter, but in addition it has been commonly found on poplar, ash, and walnut, as well as a great variety of herbaceous plants. In many cases small fruits have been damaged severely. Raspberry, currant and gooseberry bushes have probably been the greatest sufferers among the small fruits. The injury in this case is the same as to

the trees. The leaves are sapped of their vitality, turn yellow and drop early. The fruit is small, often not maturing sufficiently to be salable.

Remedies—Last season the writer tried to kill this pest on some rose bushes at Delta, Colorado, by using a spray of black leaf extract, using one part of the black leaf to sixty-five parts of water. A small compressed air spray pump was used, and as thorough an application as it was possible to make was given the bushes. At first it appeared as though the tobacco was thoroughly effective, but an examination of the bushes the next day showed that while a great many of the mites had been killed, many live ones were still crawling over the leaves, and the eggs did not seem to be affected in the least. In about a week's time the bush was sprayed again, and finally was sprayed a third time by the owner, and even then it seemed impossible to kill enough of the pests so that they would not damage the bushes.

Recently the sulphur spray (sulphur one pound, water three gallons) recommended for the brown mite, was tried on three small peach trees at Palisade, and the results were highly gratifying. Trees were sprayed on August 12, and on August 17 an examination showed the leaves to be entirely free from red spider, while untreated trees close by were just as badly infested as upon the day of spraying.

Early in August Mr. R. B. Cassells, who has an orchard on Fruit Ridge, Grand Junction, complained of a few of his plum trees being infested with the spiders. A sulphur spray was recommended and applied, and again the results were perfect. The trees not only recovered somewhat of their normal color but the fruit also improved rapidly.

The only objection that might arise to a spray of sulphur so late in the season would be the odor it would give to the fruit of sprayed trees. It is not probable, however, that any trouble would arise from this source, except



ORCHARD SCENES, ALBANY, OREGON

possibly in the case of peaches, where the fuzz would cause the sulphur to adhere. Of course, trees should be sprayed as soon as the injury begins, and should not be allowed to remain unsprayed until the end of the season, when practically all of the injury has been done to them. The use of a sulphur spray upon small fruit bushes cannot be too strongly recommended, as these are so often materially injured by red spiders.

Natural Enemies—The principal enemies of the red spider found during the season's observations, were the lace-winged flies, and a small, black species of lady-bird beetle which Professor Gillette has determined for me as *Scymnus punctum*. (See Figures 3, 4, 5 and 6 of Plate I.)

Several times during the season lace-winged fly larvae have been observed on leaves infested with mites, and no doubt they were feeding upon them. The little lady-bird was found quite abundant on infested peach trees in one orchard at Palisade. It is a tiny black beetle, so small that the orchardist might not become aware of its presence in an orchard even though it should occur in abundance. The larvae are also of a blackish color, and can be readily seen on the leaves when they are feeding upon the mites. The drawings of this lady-bird were made from specimens collected by Professor Gillette at Greeley and Fort Collins, Colorado. Professor Gillette found them specially common on elm and plum leaves, where they were feeding upon red spiders and working for the most part beneath the webs. He has briefly described the different stages of this beetle as follows:

"The eggs are very small, pale yellow objects, oval in shape, and are deposited singly upon their sides. They are almost too small to be seen by the unaided eye, as they measure barely one-third of a millimeter (one-seventy-fifth of an inch) in length.



YOUNG ORCHARD AT VERNON, BRITISH COLUMBIA

Courtesy of Dickson Land Company, Vernon, British Columbia

"The grubs or larvae are dusky to blackish in color, rather hairy, the hairs being simple and arising in clusters from minute tubercles.

"The pupa is uniform blackish in color and is covered with short golden hairs, most of which terminate in a knob.

"The adult beetles are dull black, with the tibiae and tarsi (lower portion of the legs) pale yellow, and the dorsal surface is set with short golden hairs that are not capitate, but pointed; the general form is almost circular, and the length about one and one-third millimeters (one-twentieth of an inch)."

SUMMARY

1. Only one species of red spider has been found injuring orchard trees in Western Colorado.

2. Eggs are deposited in the spring by mites that have hibernated over winter in the soil, or beneath rubbish of any kind in the orchard. Hibernation began as early as August 9 this season, and myriads of the little red pests were found in the ground at Palisade on that date.

3. Many fruit and shade trees are attacked by the mites. Small fruits are often severely injured and herbaceous plants of all kinds seem to be subject to attack. When fruit trees are badly infested the fruit is usually small and does not mature properly.

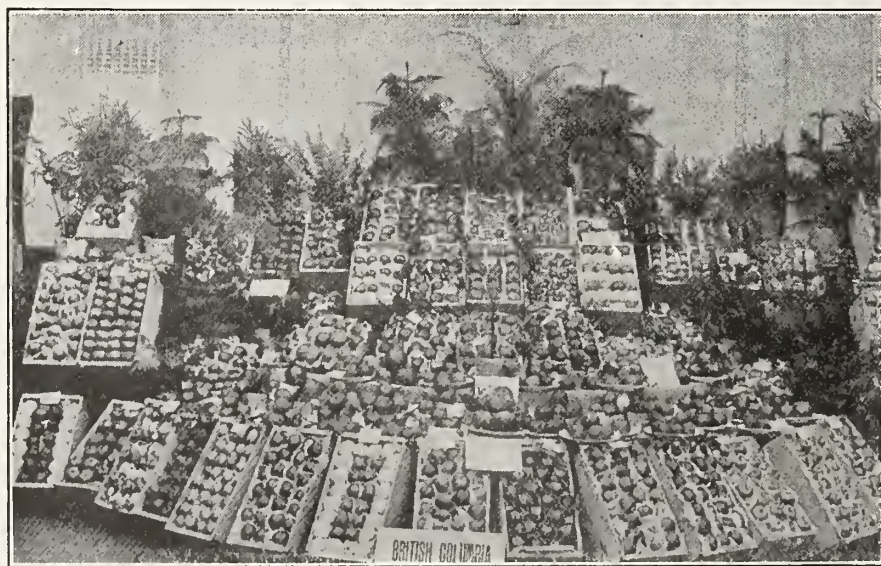
4. A sulphur spray, the same as is recommended for the brown mite, is probably better than anything else that could be used during the summer months.

5. The natural enemies of the red spider that were noticed during the season were the lace-winged flies and a minute black species of lady-bird beetle (*Seymnus punctum*).

Credit is heartily accorded Miss M. A. Palmer, who made all the drawings for this article.



GOOD ROADS in Chelan County, Washington, is a matter which is now receiving serious consideration from the local good roads enthusiasts, who are planning a permanent organization. A temporary organization will soon be formed and commercial bodies throughout the county will be asked to send delegates. It is proposed to bond the county for between \$100,000 and \$200,000, to be used to macadamize and fix all main thoroughfares of the valley. The road from Wenatchee to Leavenworth will lead through the choicest portions of the Wenatchee Valley. It is proposed that a publicity bureau be organized. The county auditor says interest on the bonds will be less than the cost of repairing the roads.—Spokane Spokesman-Review.



FINE EXHIBIT OF FRUIT FROM VERNON, BRITISH COLUMBIA

Courtesy of Dickson Land Company, Vernon, British Columbia

THE OLSEN FRUIT COMPANY, NORTH YAKIMA, WASH.

BY HARRY G. MOOCK

WHAT is known now as the Olsen Fruit Company's Ranch, composed of one hundred and twenty-six acres of the finest fruit land in the Northwest, was the original homestead of Mr. Purdy J. Flint (now retired), one of the first settlers in the Yakima Valley. Located in the famous Parker Bottom district, sixteen miles from North Yakima, this ranch has been a leader, both in size and production, for years. Mr. Flint, after having farmed it successfully for eighteen years, retired with enough worldly goods to keep him comfortable for the rest of his days. The gentleman named transferred his holdings to the present owners, The Olsen Fruit Company, of which M. E. Olsen is president and active manager, and who, with the aid of the science of modern horticulture and with the practical knowledge gleaned by himself, has brought the property to a high state of productiveness.

The water right owned by the Olsen Fruit Company is considered the best in the Yakima Valley, and one of their most valuable assets, due to the fact that the corporation, when building the present Sunnyside canal, found it necessary to survey the line of the present ditch parallel to the ditch built by the pioneers forty

years ago, known as the Konnewock ditch, which at that time was the canal used to furnish water to the ranchers of the upper Parker Bottom district. It was then proposed by the corporation

Government, through the Department of the Interior, in the course of reclaiming the arid lands bought the Sunnyside canal, and in so doing recognized the agreement made by them with the



INTERIOR VIEW OF PACKING HOUSE OF OLSEN FRUIT COMPANY, YAKIMA VALLEY, WASHINGTON
One of the best arranged in the Northwest for convenience, light, etc.

building the Sunnyside canal to take over the Konnewock ditch and use the same as the main canal for the Sunnyside, granting to the ranchers thereunder for this privilege a free, perpetual and nonassessable water right. This plan was accepted by the ranchers. The

ranchers; therefore, all the ranches that now receive their water from the Sunnyside canal have the personal guarantee of the Government that at all times will they be furnished with water according to the rights in their possession.

This ranch is in possession of ten shares of water stock which has a value on the open market of six hundred dollars per share.

Eighty-five acres of the ranch is in full bearing orchard and about twenty-six acres in two-year-old pear trees.

The ranch contains, among other varieties of bearing trees, some fifty acres of fifteen-year-old Italian prunes, which were pruned very heavily during the winter of 1907-8, and are now in fine bearing condition. This last season they produced 21,000 crates, that sold for \$13,000 gross, or an average of sixty-three cents a crate, twenty-two pounds to the crate.

Under advanced conditions of intensified farming it will be possible to raise from forty to fifty thousand crates of prunes on this acreage.

Last year, with only thirty per cent of a crop, the fifteen acres of mixed varieties of eighteen-year-old apple trees produced twenty-five hundred boxes of apples. The extra fancy sold for \$2.50, the fancy for \$1.75 and the choice grade at \$1.25, at the shipping point, Toppenish, four miles from



APPLE ORCHARD OF OLSEN FRUIT COMPANY, YAKIMA VALLEY, WASHINGTON

the ranch. From this same orchard a year ago nine thousand boxes of apples were shipped. The gross income from this acreage under ordinary conditions will easily approximate \$15,000.

There are ten acres of eight-year-old peaches that will easily produce two thousand boxes per acre. Also seven acres of Jonathan and Rome Beauty apples, with seven-year-old Bartlett pear fillers, which will in all probability produce about five hundred boxes of apples and three hundred boxes of pears.

Twenty-six acres of young pears, comprising the best varieties of Bartletts, Anjou, Peabury, Winter Nellis and Comice, make a total of about sixteen thousand trees now planted.

The main part of the orchard was planted on a bench about twenty feet above the main county road. The soil is of a deep, volcanic ash. The young pear orchard, however, was planted below the bench, and since being planted has never been irrigated, the soil being moist enough to give them a good, healthy growth, having grown during the summer and fall from mere twigs to trees measuring over seven feet in height.

With the assistance of smudge pots placed every thirty feet throughout the prune orchard, and which contained one gallon of crude oil, costing five and a quarter cents laid down at the ranch, it

was possible to save the crop during the hard winter of 1909, the first freeze experienced in this valley in thirteen years. It may here be stated that this ranch was one of the pioneers in the introduction of smudge pots in the valley, and have found them to be one of the greatest discoveries in the advance of modern horticulture.

The packing house on the ranch is probably one of the largest individual establishments of its kind in the state, being 40x140 feet in dimension, with a six-foot covered platform entirely surrounding the same.

The capacity of the packing house during the prune-packing season was

about 2,000 crates per day; 3,000 crates could easily be packed in the event of a heavy crop. It is possible for 100 packers to work at their packing stands, one back of the other, in two long rows. During the height of the season between 175 and 200 pickers and packers were employed, and the entire crop was harvested in two weeks and on its way to market.

The fruit is graded on the platform on the outside, then passed through long, open windows onto a burlap table alongside of the packers working on the inside, who in turn, when the crate is packed, pass it to the checker, who relieves them of the crate and presents them with a ticket entitling the packer to six cents. The fruit while being packed is inspected by two experienced men, one of whom represents the ranch and the other the buyer, thus insuring a first-class, uniform pack.

With the activity of the railroad building, the ranch is going to be benefited in no small degree, for the reason that the North Coast, which in all probability, and in fact has all the earmarks of the Chicago-Northwestern, a transcontinental line, has selected the flat immediately below the ranch as the right of way into North Yakima proper. This being a fact, it will be possible to load the fruit on the cars with but a quarter-mile haul, having at this date received assurances from the company that a loading station will be established at the distance above named.

The prospects at this date, the condition of the trees and climatic conditions, and all things taken into consideration, point to one of the largest crops that this section of the valley has ever produced.



PEAR ORCHARD OF OLSEN FRUIT COMPANY, YAKIMA VALLEY, WASHINGTON, MAY, 1909



OLSEN FRUIT COMPANY'S PACKING HOUSE, YAKIMA VALLEY, WASHINGTON

A PRACTICAL METHOD FOR TOP GRAFTING TREES

BY H. E. VAN DEMAN

THERE are many thousands of fruit trees, especially apple trees, of bearing age in the orchards of the fruit regions of the West that need to be grafted over to better varieties. In looking over the orchards of the Yakima and Wenatchee Valleys last fall I saw same grafting that had been done, and none of it was what I would call even passably well done. There were branches grafted three and four feet from where they forked, and reminded me of boyhood days when we walked on stilts. And there were scratches, scars, dead snags and masses of sprouts about the grafts in many cases. Such work is very bad in these valuable orchards, and I will try to show a better way.

For cutting the larger branches a good pruning saw is the proper tool. The grafting knives we see pictured in the books are not nearly so good as one made of a much plainer pattern. The blade should be about three and a half inches long, three-quarters wide and one-eighth thick, with a handle not over four inches long. The metal should be the best of spring steel, or an old file will do if it is first ground smooth. The metal should extend the full length of the handle, so that it may be of good strength. The blade end should be drawn to a sharp edge and the square point likewise drawn to an edge to be used as a wedge or lever in opening the stumps for inserting the scions. A hardwood club about ten inches long will serve as a mallet to drive the blade in splitting the stubs. A very sharp knife for trimming the scions is needed, a pint cup for holding the scions, and a shallow basket with a good handle for holding the tools and scions while doing the grafting.

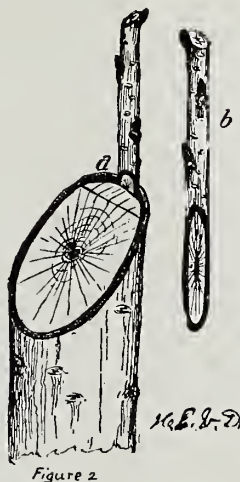
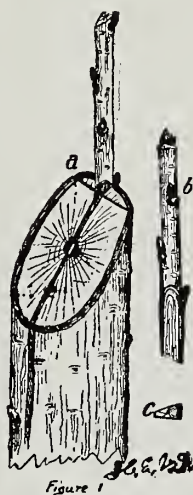
All grafting done above ground must be waxed most carefully to prevent the escape of moisture. There are several good ways of making the wax, but about

the best for ordinary temperatures is made from one part tallow, two parts beeswax and four parts rosin. Another good formula is, one part tallow, one part paraffine and six parts rosin. These proportions may be varied a little to suit the different temperatures. It can be made much harder by using more rosin, and apply hot with a brush from a small pot in a little charcoal furnace.

Wood for grafting should be of the last year's growth, but that of any age with healthy buds will grow. The larger and plumper the buds the better the wood, provided it is well matured and hard. Such wood is usually found near

be budded to change their tops. Nut trees are still more difficult to graft.

One of the main points in grafting is that the scions should be set in the



the tops of trees or well out on the side branches. It must never be allowed to dry out in the least or its vitality will be lowered.

Never attempt to graft weakly or stunted trees of any age. If they are vigorous the age makes no difference. Apple and pear trees are easy to graft, but peach, plum, cherry and apricot trees are not so easy, and they are better to

branches that have the most vigor, and this should be well in mind before a single one is cut. These are usually in the center of the top and on the sides, if the tree has a nominally shaped head. Strike for the leaders first. Cut them back to within six or eight inches of their junction with the main stem or where they unite with other branches. Get the new growth well down; not out

on the tips of the branches. Do not cut branches over two and a half inches in diameter. Rather go higher and graft two or more branches above the fork, because large stumps are difficult to heal over.

Always make the cuts diagonally across the branches, at an angle of about forty-five degrees. Never make square cut stumps, for they rarely heal over for several years, and often have ugly dead places. Clip off the point of each stub with a knife sufficient to make a place to set the scions, and never set more than one in each stub. The illustrations show how all this should be done. Such wounds will heal over quickly and smoothly, and sometimes entirely the first year. If the stocks are very vigorous this often occurs. Two or more scions in one stump cause ugly and undesirable forks.



PEAR ORCHARD OF OLSEN FRUIT COMPANY, YAKIMA VALLEY, WASHINGTON, SEPTEMBER, 1909

The most popular method of grafting trees of bearing age while they are dormant is the cleft style. It should begin as soon as freezing stops in the spring and continue until the buds begin to swell, when the bark graft can be used. The stumps having been cut as before described, beginning at the top of the tree and working downward, they should be split with grafting knife through the center. In driving the blade down with the club mallet, care should be used to have it lower on the side where the scion is to be set than on the other, that the edge may cut a smooth place for the scion instead of tearing the bark open. A small lot of scions should be trimmed ready for setting and put in the cup, in which is a little water to keep them fresh. Three inches is about the right length for the scion, with a bud at the top and another an inch from the bottom. The trimming must be done with a very sharp knife, making a long, smooth, tapering cut on each side of the bottom bud about an inch long. The edge of the wedge thus made should be thickest on the side next the bud, so it is sure to fit tight when inserted in the stock. The trimmed scion is shown at b in Figure 1, and a cross-section of the wedged part at c. With the point of the grafting knife thrust into the split in the top of the stump and used endwise as a pry, the scion may be carefully put in place. The cambium of stock and scion should be brought together, for this is the place, and the only place, that vital union can

be made from the cellular growth. Too much care cannot be taken on this point, for on it depends the success of the whole operation. The bud at the top of the wedge should be at or a little below the top of the stub. At a in Figure 1 the scion is shown properly set.

An excellent way to graft small trees or branches is by the splice method. This is very easy to do and yet it requires a skillful hand to make the cuts just right. The knife must be very sharp and with a strong handle that can be securely gripped. With a steady hand make a long, loping cut that severs the branch to be grafted. One-third the distance from the point of the stub thus made make a downward slit about half an inch deep, forming a tongue as is shown in Figure 3 at a. Make similar cuts on the butt end of the scion, as at b. Endeavor to have the wood from which the scion is cut of the same diameter as the stump, so they will match on both sides when put together, as at c. This, however, is not essential, for if the scion is quite smaller it may be set on one side and will grow very well. But the better the fit the better the chances for the cambium layers growing together, which is the vital point. The splice should be tied firmly with a small cotton string that will break easily as the growth begins, and then all waxed over.

After the bark will peel and up to the time the leaves are full size grafting may be done by the bark methods. One of



M. E. OLSEN

President and manager of Olsen Fruit Company
Parker Bottom, Yakima Valley, Washington

them is shown in Figure 2. The stump is cut off just as for the cleft graft, but it is not split. Only the bark is slit with a knife on the point of the stub. The wood should have been kept dormant in some sort of cold storage, as in the sawdust of an ice house, until needed for this operation. Cut the scion the same length as for the other methods, about three inches, and trim them from one side only and to a long, sharp point. Insert the point where the slit is made on the stub and push it down about the full length of the cut. Tie it firmly to the stub with a string and wax over every part of the wound.

It is advisable to have a helper to do the waxing, rather than for the grafter to daub his hands with the wax and the tallow that is necessary to keep the wax free in the hands. Every part of the wound should be covered perfectly, but the coating need not be very thick. Inexperienced waxers usually apply too much wax, which is wasteful. A little lump of tallow should always be at hand, but some use water to prevent the hands from becoming sticky. Warm water is sometimes needed to warm the wax, or a charcoal pot, when the weather is cool, but the warmth of the hands is usually sufficient to keep it in workable condition. The waxer must be exceedingly careful lest he displace the scions in climbing about the tree. The success of the entire job depends upon the manner in which he performs his part of the work.



PRUNE PICKING IN ORCHARD OF OLSEN FRUIT COMPANY, YAKIMA VALLEY, WASHINGTON

CHARACTERISTICS AND HABITS OF THE BUD MOTH

BY A. L. MELANDER, PULLMAN, WASHINGTON

(TMETOCERA OCELLANA)

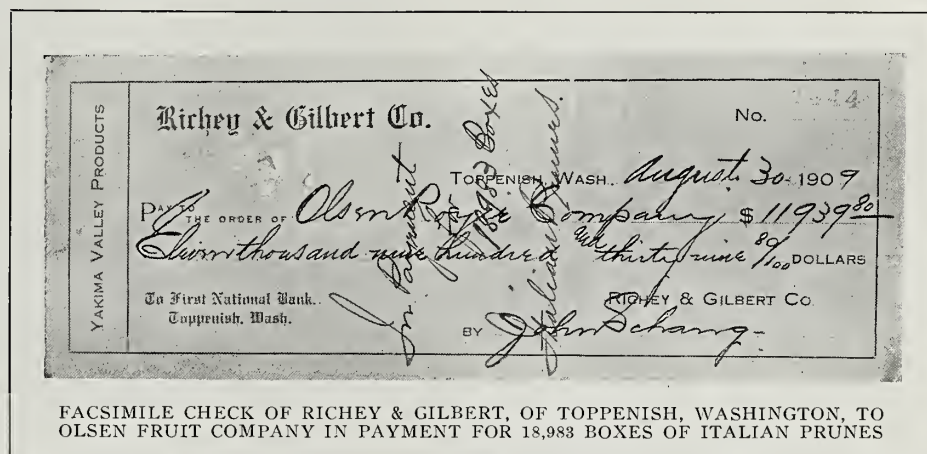
APPARENTLY, the bud moth was first introduced into the Northwest about 1893. That year it was discovered at Genessee, Idaho, having been brought in on nursery stock from New York. Shortly after, it was discovered in a number of districts in Western Washington, and recently it has invaded many of the apple-growing districts in the eastern part of the state.

Although the bud moth did not gain a foothold at Genessee, it most assuredly has become acclimated west of the Cascades. There is scarcely an orchard—apple, plum, cherry or peach—that does not show signs of its work, so rapidly has it spread. The insect also occurs in British Columbia, Western Oregon, and presumably, even into California. Eastward it has not spread so rapidly. It is not considered a pest in Idaho, and Colorado fruit growers do not have to contend with it. However, in the Northeastern states and in Canada it is a troublesome pest, having been introduced there from Europe many years ago.

The bud moth attacks the apple principally, but it is a greedy devourer of any orchard trees. In early spring, just when the trees have leaved out, the unsightly webbing together of terminal shoots or the destruction of the blossoms is only too common an occurrence in the infested orchard. This work of the bud moth is conspicuous, so that any grower should remember whether his trees were affected last year, and thus he is forewarned to take action against the pest this season.

The bud moth passes the winter in a tiny weather-proof cocoon, an eighth of an inch in length and colored exactly like the bark. Even bits of bark or lichens may be woven into the cocoon to

midst of which they feed. When the tree blossoms they move to the flower clusters and nibble at the stems of the blossoms. They are greedy creatures, biting here and there and destroying



render it more inconspicuous. These winter cocoons are hidden alongside of buds, in crotches or in cracks in the bark, and even close searching fails to disclose many. In the cocoons the worms sleep through the winter, awaiting spring. When the sap starts and the buds swell the tiny worms open their cocoons and after a few days emerge to take up their existence as a bud worm.

Some bud worms appear early, others are more tardy. They attack terminal shoots or unfurling buds, spinning the leaves together to form a nest, in the

much more than they need for food. In a few weeks the nipped leaves and blossoms become dead and dried, affording conspicuous evidence of the presence of the pest.

When the bud worm is nearly full grown, at which time it is a reddish brown color and is considerably smaller than a codling worm, it spins a loose tube within its nest of leaves, within which it usually pupates. Some of the late worms seem to form loose cocoons in such sheltered places as the stem end of apples or among loose bark, in which case their cocoons are closer knit.



WHEAT FIELD NEAR CALDWELL, IDAHO. EIGHTY BUSHEL PER ACRE. GROWN BY IRRIGATION

resembling those of the codling moth, but smaller.

Quite likely there are several broods of bud moth in Washington. The earliest individuals are true bud insects, attacking the unfurling leaves and opening blossoms. Those appearing later in the season are leaf and fruit eaters. After midsummer the bud worms feed usually on the under side of the leaves, along which they spin their tubes of silk. When disturbed they retreat into their nests. Most of their feeding is done at night.

Although several dozen articles have been written about the bud moth, none mention it as a pest of fruit. It seems undoubtedly true that late in the season the bud moth will devour apples. Attention was first called to this feeding habit by the condemnation of a shipload of apples from Orcas Island in the fall of 1907. Although the identity of the apple insect was doubtful, the presence even of any insect injury being questionable, inquiry disclosed the fact that late bud worms sometimes will feed on the fruit. The question is a serious one. Undoubtedly some of the so-called "stung" apples of Eastern as well as Western Washington have been made unsaleable because of the nibbling of bud worms. Just how much of this damage should be ascribed to the bud worm and how much to the codling worm it is impossible to determine.

The bud moth is generally considered as a difficult foe to combat. The usual prescription is a spraying of arsenate of lead, one pound to fifty gallons, given as soon as the first injury manifests itself. However, this treatment never gives perfect results. The leaves are growing too rapidly and thus spread the poison. The worm does its feeding within its nest and thus escapes. This spraying of an arsenical should be repeated in a week or so for the best effect.



HOME AND STRAWBERRY FIELD OF S. C. ZIEGLER, WHITE SALMON WASHINGTON

Of late years I have recommended as a substitute for the dubious arsenical applications a forceful spraying of sulphur-lime. This is normally given anyway to check scale, aphids, red spider, etc., and should serve for the bud moth also if applied a little later than usual, after the over-wintering worms have opened their cocoons. If sprayed before that time the worms escape destruction owing to the spray-resisting construction of the winter cocoons. Spraying in this manner just before the buds burst has been tried by practical growers in Western Washington, and with success. For best effects this sulphur-lime spraying should be given under as great a

pressure as possible. Bordeaux nozzles alone should be used, and they should be provided with an angle coupling setting them at about forty-five degrees to the extension rod. The spray should be thrown downward so as to wet behind the buds and inside the crotches, the places where these insects hide.

Summer treatment for late worms is unsuccessful. Arsenate of lead applied with an undersprayer may be used if it is deemed necessary. Certain it is that orchards have been sprayed for codling moth, and yet produced many "stung" apples; but whether it was the bud worm or the codling worm that bit the fruit can not at present be determined.

Other Apple Insects.

Washington has several apple-feeding insects. The number is small, however, as compared with the older communities. Most of the destruction in the state is caused by the codling moth, which is quite generally spread throughout the commercial apple growing districts of Eastern Washington. The Japanese apple miner, a small moth related to the codling moth, is recorded from the Puget Sound region, but is certainly very rare. In Whatcom and Kittitas Counties there is a new apple mining saw fly. Saw flies generally are leaf-feeders, but this species produces a green caterpillar that burrows into the fruit. There is some evidence that the Eastern apple maggot has secured a foothold near Spokane. This insect is sometimes known as the railroad worm. It constructs a narrow tunnel here and there through the fruit. I have seen no specimens as yet.

The peach twig borer, an insect closely related to the bud worm, is declared likewise to have apple-nibbling habits.



PLATE OF APPLES FROM CALDWELL, IDAHO

THE PREVENTION OF FROST-INJURY IN ORCHARDS

ADDRESS DELIVERED BY F. A. HUNTLEY BEFORE 1910 MEETING OF WASHINGTON HORTICULTURAL SOCIETY AT WENATCHEE

THE prevention of frost-injury to fruit buds and blossoms in the early spring is a subject of vital interest in many localities. That such injury can largely be prevented under certain conditions has been demonstrated. As a matter of fact, the prevention of frost-injury by smudging has been in practical use for centuries. In view of this, it seems strange that there is not a better understanding of the principles involved among those most vitally interested in the subject.

When the trees are in bloom, the temperature of the air must not be allowed to fall to the freezing point or the blossoms will be injured and the result will be a shortage, or, most likely, a total loss of the fruit crop.

The object we are seeking is to place an artificial check upon the falling temperature and hold it within the limits of safety. This problem must be worked out along scientific lines to prove of permanent value and reliability.

Heat absorption and radiation by the soil, like the laws of gravitation, are fundamental principles and operate the same now as they did before the coming of the smudge pot. The views expressed by some of the patentees of so-called "orchard heaters," who claim that a single "heater," containing less than a gallon of oil, will raise the temperature of over 15,000 cubic feet of cold air ten degrees and maintain such temperature for a period of from five to seven hours, are not only unintelligent, but absurd.

If such a volume of cold air is deprived of an extensive source of heat-radiation such as the earth affords in the case of smudging, any change in temper-

ature resulting from the heat generated by a gallon of burning oil would, to quote an expert of the United States Weather Bureau, "hardly be perceptible within the range of practicability." As the actual heat of the fire counts for

ture of the air immediately surrounding the trees, and preventing its rapid escape to the upper air in the great volume of which it can make no perceptible change.

The composition of the soil, and its physical conditions in regard to drain-



S. J. HINTON MARKETING HIS CROP OF APPLES, CASHMERE, WENATCHEE VALLEY WASHINGTON

nothing except in the immediate vicinity, no advantage would result from the use of any practical number of these "heaters" without the reinforcement of the latent heat of the earth absorbed during the day.

Such being the case, the subject resolves itself into the problem of working out a practical method of conserving this earth-stored heat, retaining it sufficiently long to modify the tempera-

age, determine to a very great extent the degree of heat it will maintain at different depths. If a soil has free drainage, and contains a liberal amount of sand, it will absorb and radiate heat more readily than will a soil of greater compactness and more imperfect drainage. Fortunately, most soils requiring irrigation are of a warm nature. Soils absorb heat both from the sun and from the air. While the air remains at a

higher temperature than the soil, the soil will gain heat; but as soon as the temperature of the air falls below the temperature of the soil, as it frequently does in the spring, the soil gives off heat and the temperature of the air is warmed thereby.

A soil temperature at night, during the spring months is not infrequently from ten to thirty degrees warmer than the temperature of the air. It can readily be seen what an enormous amount of heat radiation then takes place. This heat will be lost, for all practical purposes, if the atmosphere is clear; but if the atmosphere is heavy, whether made so by artificial means or by natural conditions, the heat is retarded in its upward movement and the temperature of the air near the earth is greatly modified. It is true, as many know, that on cloudy nights there is less danger of frost than on clear nights. This is due to the fact that the clouds—which accompany heavy atmospheric conditions—tend to prevent the rapid



A BRANCH OF APPLES FROM THE COLUMBIA RIVER BASIN

escape of heat from the earth and hold it where it is of practical benefit to the buds and blossoms. The clouds also intercept the cold air descending from above to the earth.

The "smudge" idea is to create an artificial cloud to hang low over the area to be protected. This "cloud" acts as a cover through which the heat escapes slowly, and the cold air coming down penetrates slowly, and the heat radiating from the earth is thus saved within the limits of usefulness and the rapid fall of the temperature of the air is prevented. The basis of this artificial cloud, for most practical purposes, covering extended areas, is smoke. With certain limitations, the condensation of moisture, in addition to the smoke, is beneficial, as moist air is heavier than dry air. The best material to use in making this cloud or "smudge" is something that will burn with a slow, smouldering fire and produce quantities of smoke. Materials which burn quickly may do more harm than good, as they afford little smoke and cause upward currents of air which carry off the heat rapidly. One "orchard heater" patentee, who is at present advertising his particular contrivance extensively, claims as its strong point that it has a central draft and will produce clean, unadulterated heat, with little or no smudge. It would seem that this man has undertaken to heat the heavens.

So far as recent tests have demonstrated, where large areas are to be protected the most practical and economical material to burn is crude or fuel oil, although some of the most successful attempts at smudging have been made by burning coarse straw manure and other damp vegetation which make very little fire but furnish great volumes of smoke. The burning of such material, however, is not advisable because of the inconvenience in handling it and also because of the ultimate depletion of the fertility of the soil following such a practice.

Some of the patentees of smudge pots make the claim that the scientific principle of heat absorption and radiation by the earth is not correct, but that heat of the fire from the smudge pot is the saving element, citing the fact that their little fires afford protection when the wind is blowing and the smoke rapidly drifts away. The fact of the matter is, as many horticulturists know, that vegetation will endure many more degrees of cold without serious injury as long as the air is in motion.

The features most to be desired in a smudge pot are simplicity and efficiency at a minimum cost. I would recommend:

First, that the model smudge pot have a capacity of more than one gallon.

Second, that the flame, or amount of combustion, be under control and subject to regulation as may be required.

Third, that the opening at the top be sufficiently large for convenient refilling.

Fourth, that it have flaring sides, which will favor the burning of oil thinly spread out around the edges.

Fifth, that it will "nest" compactly with others of its kind to facilitate convenient and economic transportation and storage.

Sixth, that its cost shall not exceed ten or twelve cents complete, including cover.

With these points in view, I have designed a model which has been styled



Photo by Gifford

AN AFTERNOON TROUT CATCH NEAR THE DALLES, OREGON

the "Huntley" smudge pot, and it affords me much pleasure to present this model to the fruit growers of the Northwest, with the free privilege to copy and manufacture, trusting that it will be received with favor and that it will meet every requirement for which it was designed. The Kennebec Fruit Growers' Association, after thoroughly testing many of the more expensive and complicated patent smudge pots, have adopted the "Huntley" model for their coming campaign against frost injury in the Kennebec district.

In conclusion, I would emphasize the fact that no smudge pot, however modeled or designed, can be productive of satisfactory results without the vigilant care and attention of the fruit grower being devoted to the conditions in his orchard during the period of danger from frost. In view of the fact that the earth begins to part with its heat early in the evening, as soon as the temperature of the air cools below the temperature of the soil, it is most important that fires be lighted early—before this natural heat is lost to the immediate surroundings and before the rapid descent of cold air takes place. For this purpose it is not necessary to start the pots burning at full blast at first, as a little smudge is often sufficient to check and hold the heat which is being given off by the earth during the early evening.



CAMERON'S ORCHARD, WHITE SALMON, WASHINGTON. EIGHTEEN BOXES PICKED FROM SEVEN-YEAR-OLD TREE

HOW CAN ONE MAKE A LIVING ON A SMALL TRACT?

BY PHILO K. BLINN, COLORADO AGRICULTURAL COLLEGE, FORT COLLINS, COLORADO

THIS question is earnestly asked by two classes of people who, because of poor health or uncongenial surroundings and employment, are anxious to try it, and desire to invest their earnings in land that they may eventually make a living from it. For such, plenty of advice is found in the land booming real estate literature, for the alluring accounts of the large sums of money realized from small areas are sure to attract a person in necessity; especially so when the claims and figures are backed by the most convincing proof—the personal testimonials from the men who have actually secured the results. The fact that it has required an equipment of perhaps years of training and experience is not mentioned, or that the condition of soil fertility was ideal, or that specially favorable climatic and market conditions prevailed which made the returns possible. These points are kept in the background; and the items of cost and expense are seldom deducted or even mentioned.

Another class of people are asking the same question—those who have tried it, honest, hard-working men and women, who have lacked the necessary resources, experience and favorable opportunities to “make good.” It is unfortunate that

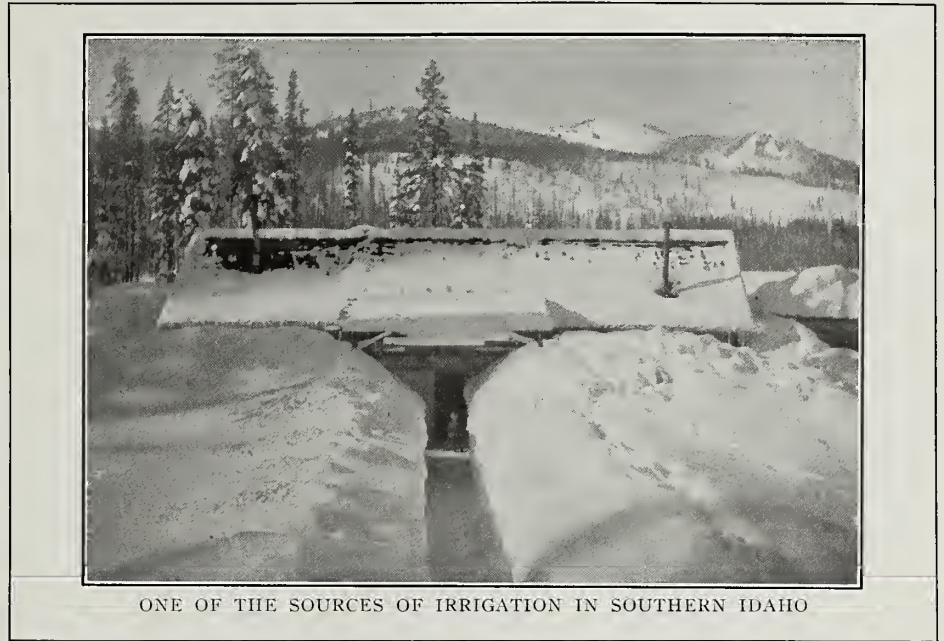
so much misleading information is sent out, for reaction is sure to follow.

Hardly a mail comes to the Colorado Agricultural College and Experiment Station that does not contain letters of

inquiry upon the essence of this question—information which in many cases it is impossible to furnish in a way that will be satisfactory to the inquirer, for so much depends upon the local conditions and the ability of the man to cope with obstacles.

There is no question about the right kind of men in the right kind of surroundings making a good living on a small tract in truck farming, poultry and fruit. Every experienced man knows that many small farms are failures; that is, the ten and fifteen-acre farms devoted to field crops, like grain, beets, potatoes or cantaloupes. For a few years there may be bountiful returns, but eventually rotation with alfalfa is necessary, and then there must be other resources for the farmer because his small area seeded to alfalfa will not afford him a living.

A practical farmer recently remarked that “a man can buy forty acres of land at \$250 an acre, and come nearer making it pay out than if he bought ten acres at the same price.” The profits from the ten acres will be entirely consumed by the necessary expenses, and with no force in reserve; while the forty-acre farmer will have a chance to make some profits above expenses. It is difficult to say how small a farm can be profitably rotated. Much depends upon the crops and the local conditions. One thing is evident from the experience of the past; that to keep up the fertility it will require about as much land in alfalfa all the time as there is land planted to other crops. Probably from twenty-five to forty acres should be the minimum farm in Colorado outside the fruit and truck farming sections. Those that contemplate going onto a small tract should understand that there are many elements to consider before making a choice. Soil, climate, water, markets, labor, insects, plant diseases, and many minor points, besides experience and persistence.



ONE OF THE SOURCES OF IRRIGATION IN SOUTHERN IDAHO



The top picture is a view of the black sagebrush found on the bench lands near Baker City, Oregon. The lower picture shows corn crop photographed on the same land ninety days after. Photographed on “Sunnyslope,” under the Baker Irrigation Company’s system, adjoining Baker City, Oregon.

LOS MOLINOS, TEHAMA COUNTY, CALIFORNIA

BY ALBERT W. CASEY

OVER in Tehama County, California, by the Sacramento River where the steamboats run, is the Los Molinos country. It lies in the northern part of the big valley just as

fine, park-like landscape, where ancient oaks are scattered over the fields, with neatly fenced highways laid for miles along the distance. Then the beautiful river is reached by which the ranch was named: The Rancho del Rio de Los Molinos—the ranch of the river of the mills. The water is alive and sparkling, just the place for the rainbow trout and lordly salmon which play in the river's eddies. Sixteen million, and a half million more, salmon eggs secured last year—some season's many more—is the record of the work of the United States fish hatchery on this Los Molinos River where it flows through the company's lands.

Also its usual flow is as

maintenance, are not alone sufficient for the making of an ideal home. There must also be pleasant surroundings. In this, also, Los Molinos is superior. The early proprietor did not, as was the case in other districts, destroy most of the trees to make room for grain planting. They had the wise forethought to leave many majestic oaks, and these are scattered with pleasing intervals about the landscape. Add to these valuable natural attractions the proximity of thriving cities, the neighborhood of prosperous homes with churches and schools, and home life becomes a real satisfaction. Besides these are good markets and convenient transportation. The River Sacramento, being navigable for several miles above Los Molinos and all the way below it to the sea, affords means for cheap competitive transportation.

There is one more requirement—climate. The only way climate can satisfactorily be discussed is by comparison with some known example. It should first be borne in mind that Los Molinos is not on the coast. Therefore, in seeking a point for comparison, an inland district should be taken. Riverside, in the south of California, is probably as



RICH PASTURE FOR STOCK

the east and west hill courses draw towards each other and before they close in above Red Bluff. The people over at Los Molinos have such a combination of good things that the story seems almost too good to be true. But the best way to learn about a place is to go and see it, and this is what the Los Molinos people like to have you do.

The first item which strikes the visitor is the hospitable inn with its pleasant surroundings. Travelers go out of their way to stop here, and there is scarcely another land project where the accommodations are at once so convenient and comfortable right on the ground.

Here was once a great ranch of thousands of acres, where the principal crops were grain and hay, while cattle, horses and sheep were kept in great numbers. The Sacramento River was the means of transportation and down its broad waters went the barges and steamboats laden with grain by hundreds of tons for distribution over the world.

This is now all changed. The broad acres have lately been made available for smaller homes, with modern intensive farming. They are being rapidly taken by a good class of settlers.

The visitor is next impressed with the

much and a little more than the estimate for the much talked about Owens River water project for which Los Angeles is paying thirty million dollars and from which such great results are looked for. But it is the land itself, after all, that we want to see. It is the land and its supporting colleague—irrigation water full and free—that makes the wealth, and we come to that with much interest since it is told us that there is no other proposition like it anywhere.

Why is Los Molinos superior to other locations in this wonderful valley? For one thing, its elevation. It is valley land and yet more than two hundred feet above sea level. Its lands are smooth, without roll or hill, but set above danger of flood or breach. There are no levees against the great river here. This elevation, with the excellent soil and subsoil, insures perfect natural drainage, healthful surroundings and superior irrigation conditions. Whether wet by rains or irrigation, the lands here do not remain saturated, and the water "table" or first stratum is many feet below the surface. Thus the rich soils are always easily cultivated. In support of these conditions is that other essential requisite—abundant, never failing water for irrigation cheaply applied. Compare the tremendous effort and great expense elsewhere with the supply and facilities here.

But land and water, while necessary for its



HEADING NO. 2. DIVERSION OF WATER FOR IRRIGATION SOUTH OF RIVER

well known as a desirable resident section with an attractive climate and most successful in the production of citrus fruits as any place that may be named. If a given locality, then, were found to possess the qualifications of the Riverside section, with some advantages that cannot be had at Riverside, there could hardly be any argument about the superiority of the locality in question. It is these qualifications which are found at Los Molinos.

The United States government service has been established for a number of years at Red Bluff, near Los Molinos. The advantage, if any, is in favor of Los Molinos. A tabulation from the United States Weather Bureau reports for each month in each year for ten years for Red Bluff and for Riverside shows the extremes of temperature both winter and summer to be almost exactly the same. Note that it is extremes that are referred to. Averages may sometimes confuse, but extremes show the range which may be expected.



VOLUNTEER CROP OF HAY

Los Molinos has the further advantage of a sufficient annual rainfall. At Riverside the average annual rainfall is a fraction over ten inches; at Red Bluff a fraction over twenty-six inches; at Los Molinos, slightly less than at Red Bluff. It is well known that at least from fifteen to twenty inches of water must be supplied to land every year in ordinary climates to insure a crop. This is why, as, for instance, in Southern California, it is only by skillful advantage taken of the winter rains that crops under the old mode of farming without irrigation are matured in countries of limited precipitation. When the rainfall is short there or comes at the wrong times the crop is more or less a failure. On the other hand, the rainfall at Los Molinos is shown to be ample without being excessive.

Further upon the climate of Los Molinos, the nights in the warm season are cool, there are no electrical storms worth notice nor destructive winds, and not in many years a frost severe enough to damage anything, and then only sensitive vegetation.

The lands of this charming countryside have lately been opened for occupation in smaller tracts under modern

to beautify her ground plan by careful tree planting around the home. The man who would not be charmed by Los Molinos lands is hard to please."

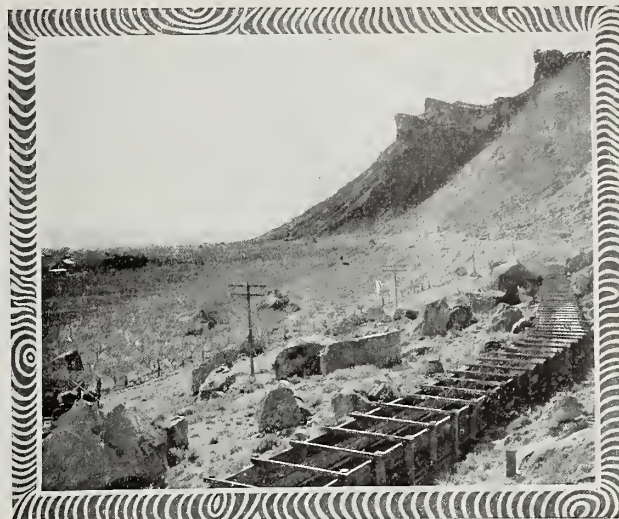
Los Molinos is in Tehama County, California. Its railroad station is 122 miles north by rail from Sacramento, thirteen miles south from Red Bluff. Los Molinos is the most northerly station of the Southern Pacific Railroad on the east side of the Sacramento River. Its lands lie for ten miles along the east bank of the Sacramento River and are the cream of the Rancho del Rio de Los Molinos. The company is made up of the former owners, who incorporated to sell their own land. Their advertisement appears in this issue of "Better Fruit."

◆ ◆ ◆

IN those peach orchard districts where the winter temperature fell from fifteen to twenty-four degrees below zero, and remained below zero for any length of time, there is great danger of more or less injury to the peach.

The peach tree may be injured by winter freezing in three different ways, viz: First, by freezing at the crown, or ground line, causing the so-called "collar girdle;" second, by freezing back the one-year-old wood, and sometimes more; and third, by killing only the fruit buds which grow on the one-year-old wood. With the first of these there may or may not be a complete girdling of the tree at the ground line. The tree may recover if there is not a complete girdle. In the second case

the better the new wood is hardened off the less likely it is to freeze back. Where the wood has been frozen, the cambium, or growing layer, will be found to be of a dark brown color, and in some cases the sap wood will also be found to be somewhat darkened. As everyone knows, the growth of a tree, as shown by a cross-section, takes place in a ring. Now, it is possible for freezing to take place on one side only; thus, if left alone it will grow around and over the injured side. In the last case, where only the fruit buds are killed, there probably



IRRIGATION FLUME IN COLORADO, ON THE LINE OF THE DENVER AND RIO GRANDE RAILROAD

will be some live leaf buds and also some dormant and adventitious buds.

For these reasons, in regard to the possible recovery of some of the growing wood, fruit buds and the outgrowth of dormant and adventitious buds, it is not advisable nor is it practicable to prune peach trees which have undergone winter freezing during the dormant season.

Another reason for not pruning such trees until the growth in the wood and buds commences is that it is almost impossible to tell what to prune. Pruning at this time one may cut off too much, thus causing a "dehorning" which later on might give trouble. While if left alone until the buds start, some parts at least may recover.—By R. S. Herrick, Field Horticulturist, Oregon Agricultural College, Corvallis.

◆ ◆ ◆

Almost the whole world knows of Hood River as a place that produces the best fruits, and all of Hood River Valley should know, and could know, that there is one place in Hood River, under the firm name of R. B. Bragg & Co., where the people can depend on getting most reliable dry goods, clothing, shoes and groceries at the most reasonable prices that are possible; try it.

◆ ◆ ◆

"Better Fruit" comes to us better than ever; indispensable to every orchardist in the West. See our clubbing list for a liberal offer.—Gresham Herald.



IRRIGATING AN ORCHARD IN COLORADO, ON THE DENVER AND RIO GRANDE RAILROAD



NORTHERN PACIFIC RAILWAY BRIDGE OVER THE COLUMBIA RIVER BETWEEN KENNEWICK AND PASCO, WASHINGTON, OVER WHICH IS HAULED THE FRUIT FROM THE GREAT YAKIMA VALLEY

methods of farming. Though advertised in the most conservative way, the result has been the obvious one of rapid settlement by thrifty homemakers. Very soon the lands available at present low prices will be taken.

This article can best be closed by a quotation from a writer on California subjects who is not connected with Los Molinos in any way and who saw the land just before it was offered for sale in its present shape.

"Its streams, its parks of oak, its splendid soil make it an ideal country seat and we envy the farmers who are fortunate enough to get a slice of this old-time ranch. Think of field after field of a thousand acres each, with no waste land nor poor soil on them.

"It is proposed to make it an ideal farming community, inviting good farmers, with a few thousand dollars to invest, who will build tastefully and help nature

BETTER FRUIT

HOOD RIVER, OREGON

OFFICIAL ORGAN OF
THE NORTHWEST FRUIT GROWERS' ASSOCIATION
A MONTHLY ILLUSTRATED MAGAZINE
PUBLISHED IN THE INTEREST OF MODERN
FRUIT GROWING AND MARKETING

ALL COMMUNICATIONS SHOULD BE ADDRESSED AND
REMITTANCES MADE PAYABLE TO

Better Fruit Publishing Company

E. H. SHEPARD
EDITOR AND PUBLISHER

C. R. GREISEN, *Assistant Editor*

H. E. VAN DEMAN, *Contributing Editor*

STATE ASSOCIATE EDITORS
OREGON

A. B. CORDLEY, *Entomologist*, Corvallis
C. I. LEWIS, *Horticulturist*, Corvallis

WASHINGTON

W. S. THORNER, *Horticulturist*, Pullman
A. L. MELANDER, *Entomologist*, Pullman

COLORADO

C. P. GILLETTE, *Entomologist*, Fort Collins
E. B. HOUSE, *Irrigator*, Fort Collins

IDAHO

J. M. ALDRICH, *Entomologist*, Moscow
UTAH

DR. E. D. BALL, *Director and Entomologist*, Logan
MONTANA

O. B. WHIPPLE, *Horticulturist*, Bozeman
BRITISH COLUMBIA

R. M. WINSLOW, *Provincial Horticulturist*, Victoria

SUBSCRIPTION PRICE \$1.00 PER YEAR
IN ADVANCE IN UNITED STATES AND CANADA

FOREIGN SUBSCRIPTIONS, *Including Postage*, \$1.50
ADVERTISING RATES ON APPLICATION

Entered as second-class matter December 27, 1906,
at the Post Office at Hood River, Oregon,
under Act of Congress of March 3, 1879

FRUIT GROWERS throughout the Northwest are beginning to realize that exorbitant retail prices on Northwestern apples in Eastern cities is a serious question, and that it is restricting trade. No attention was given this feature until "Better Fruit" published an editorial on the subject. In the March number the subject was covered fully by an article entitled "Consumption of Fruit," and also a short article called "Kicking." If you have not read these two articles, don't fail to do so. Every influence and pressure should be brought to bear to cause and compel the retailer to sell Northwestern apples at a reasonable profit. Northwestern apples as a rule in an Eastern city will not cost the retailer any more than \$3.00 per box. He can afford to retail them at \$6.00, making 100 per cent profit. As a matter of fact, he retails them at a price ranging from 75 cents to \$1.50 per dozen, or from \$10 to \$15 per box. He is making 300 to 400 per cent profit. These prices are exorbitant and prohibit the consumption of fruit, and large consumption of fruit is what the Northwest demands.

ARE YOU INTERESTED IN BEE KEEPING, POULTRY AND GENERAL FARMING?

No section of the United States offers better opportunities for those interested in the subjects mentioned than the West. The supply does not begin to equal the demand. Prices are good, profits exceptional. If you want to know more about the opportunities in the West and Northwest, use the coupon. The Pacific Monthly Company, Portland, Oregon.

Enclosed find 25 cents. Please send three recent numbers telling about bee keeping, poultry raising, etc.

Name-----

BF Address-----

We can only expect to have our fruit consumed when sold at proper prices in the Eastern cities.

We do not fear over-production. Such a thing as under-consumption is possible. Under-consumption will be the result unless we prohibit the high retail prices. The editor of "Better Fruit" was invited by the experiment station at Pullman, Washington, to accompany the institute meetings held in February. These meetings were held at Ellensburg, North Yakima, Sunnyside, Grand View, Kennewick and Prosser. The subject of exorbitant retail prices was presented forcibly by the editor of "Better Fruit" and the campaign is being taken up by the local press of all these cities. We hope every fruit grower will interest himself in keeping the ball rolling.

◆ ◆ ◆

THE LAFEAN BILL—There are some very strong fruit growers' associations throughout the Northwest territory, a complete list of which appeared in the March issue. "Better Fruit," editorially in many issues, and in other ways, endeavored to show the value and importance to the fruit growers of associations, and in the districts where good associations exist the fruit growers have found from practical experience that the association can buy all materials used by the fruit growers in carload lots, supplying them at wholesale prices and saving immense sums of money for them. The buyer has also found that the association also puts up a uniform pack, which cannot be put up by a lot of individual growers according to their own ideas. It has been proven that Eastern buyers prefer to buy through an association instead of buying from a lot of individuals, because they can rely on the grades, and what is more, the grades are guaranteed by the association. The growers have found that through a good association, properly run and managed, that they realize far better prices than they ever secured as individual shippers or consigners. Organization is the foundation of success. It was through the different associations in the Northwest that a meeting of the fruit growers was called by the National Apple Show at Spokane to discuss measures for opposing the Lafean Bill. Through the efforts of the associations largely the Porter Bill was killed. Through the efforts of association workers representatives were sent from Wenatchee, Yakima, Spokane, Idaho, Hood River, Willamette Valley and Southern Oregon to Denver to attend the meeting of the Western Jobbers' Association, and to Washington to appear before the Congressional Committee to oppose the Lafean Bill, and while definite information has not been received by the committee up to this date the general impression of those representatives from the Northwest who were present is that the bill will not come up before Congress this year. We believe we are justified in saying that the fruit growers of the Northwest are in favor of the right kind of a bill, along the right lines; one that will call for uniform sized box being used through-

out the different apple districts and for uniform and standard grades. We believe the fruit growers are ready not only to endorse the right kind of a bill, but to earnestly work for it, but we have not met a single fruit grower in the Northwest territory who is in favor of the size box, 2.342 cubic inches, as recommended by the Lafean Bill, and we do not see why the East has any right to arbitrarily adopt some size box that has never been used anywhere and dictate it should be used, or that the large apples of the West be put on the same grade as smaller apples of many of the Eastern sections.

◆ ◆ ◆

COUNTRY LIFE COMMISSION is being fathered in a very enthusiastic way by the enterprising city of Spokane and is a move in the right direction for betterment. It should have the assist-

Lyle Fruit Lands

Where "The Rain and Sunshine Meet." Across the Columbia from the famous Hood River, Oregon, orchards. Apples, peaches, pears, without irrigation. First prize at the National Apple Show. Unsurpassed soil, climate and scenery. Also wheat land and stock ranches. Write or call on Morginson, Dayton & Clark, Lyle, Washington.

Upper Hood River Valley

Cheap and the best of land. Plenty of water for irrigation at low rates. Good transportation facilities. You are cordially invited to see what I have done at my home in six years. I handle these lands.

W. H. MARSHALL

Dee, Oregon In Hood River Valley

GOVERNMENT Irrigated Land

Cheap fruit, dairy and alfalfa lands. Best and cheapest water right in the West. Excellent business opportunities. Cheap power for manufacturing purposes. Address

GILBERT E. BRINTON REALTY CO.

Heyburn, Idaho

Have a few second-hand and new

SEPARATORS

on hand which I will sell cheap.
P. O. Box 746, Portland, Oregon.



WEST PORTAL GUNNISON TUNNEL, ON DENVER AND RIO GRANDE RAILROAD

ance of every fruit grower throughout the country. The editor has the honor of being one of the members of the Country Life Commission appointed by the Governor of Oregon for the betterment of living conditions of the country.

◆ ◆ ◆

THERE are lots of good fruit districts throughout Colorado, Utah, Montana, Idaho, Oregon, Washington and British Columbia, but they are not all alike. Each one has its individual soil and climatic conditions, which must be carefully studied in order to enable the grower to determine wisely what to plant. Almost every district has certain kinds of fruit that do better than other kinds, and certain varieties that do better, and those intending to plant an orchard should study conditions. They should visit the old orchards and find out from fruit growers what varieties are hardy and thrifty, what varieties bear well and regular, what varieties ship well, what market there is to reach, and what other districts come in competition with the particular district where he intends to plant his orchard.

◆ ◆ ◆

THE Easterners who wanted to make the A grade two and a half inches in diameter, or, in other words, to make apples that run 150 to the box the fancy grade,

did not like it when the Westerners, who grow larger and fancier apples from 128 to 45 to the box, wanted to have these put in as Grade A and the small size, four and one-half tier, 128, Grade B. Well, we guess not. But they did want to dictate the size of the box the Northwest should use, so as to disturb the uniformity of pack of the Northwest, which has met with so much success among the Eastern trade. We want a fruit bill, but we want it right, square and fair to all districts, and we don't want one that discriminates against the Northwest.

◆ ◆ ◆

THE crop throughout the Northwest at the present time bids fair to be the best ever produced. The quantity of fruit will be larger this year than at any time previously, which is a

matter worthy of consideration on the part of every fruit grower and every association. It is time to begin studying the situation with a view of increasing the consumption of fruit. This can be done in two ways by increasing the distribution: By supplying those cities with Northwestern fruits which have never received them before, and by regulating the prices so as to increase the consumption. Every district should make a study of market conditions thoroughly, and we hope no district will be short-

sighted enough to demand a price that is unreasonable. Prices should be made right, so that the consumption of fruit will commence at the harvest time and continue through the season. If fruit is held at too high a price, a price which is prohibitory, particularly apples, it means that they go in cold storage, to be held until late in the season, and doing this is just what works serious evil. It prevents consumption during the first half of the season and holds up twice the amount of fruit to be marketed the last half of the season, which is more than the season can consume, and consequently, the supply being greater than the demand, it compels the seller to accept too low a price.

◆ ◆ ◆

EVERY fruit grower who has not got a spring wagon to haul fruit to market should either get one before the fruit season commences or should buy springs that could be put under the bed, which will prevent bruising. Every wagonload of fruit should be covered with canvas to keep out the dust, so that fruit reaching the market will be in clean condition.

◆ ◆ ◆

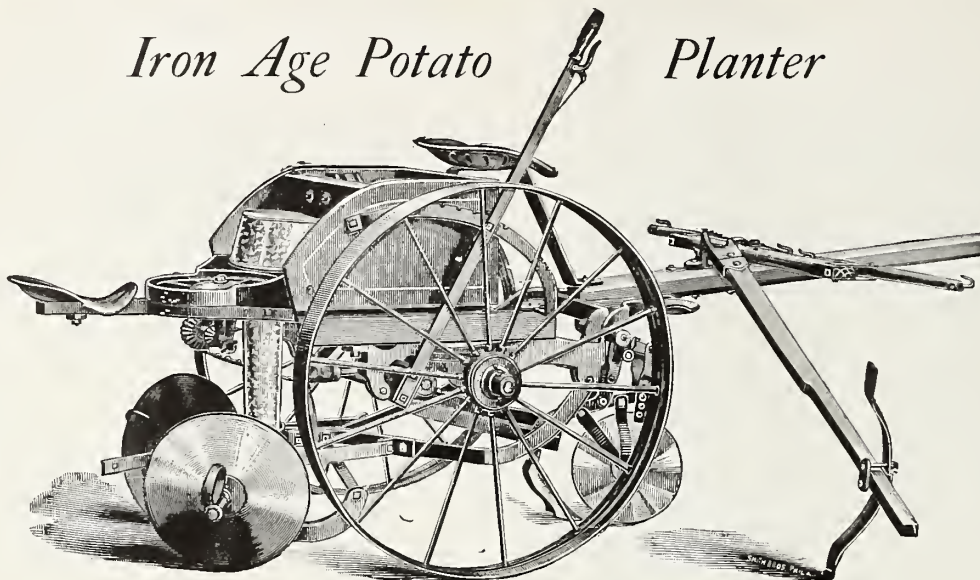
IN OUR opinion, the damage from codling moth is due largely to lack of thoroughness. We honestly believe a greater per cent of wormy apples is caused by lack of thoroughness than from any and all other causes. We believe every fruit grower, at least those who have an orchard of any size, should have a power sprayer. You can get just as much power with a hand outfit to do your spraying with, but as a matter of fact you don't. The hired man doesn't keep the pressure up when you are away, and if you are on the ground yourself, you are only human and would get tired as well as the hired man.



FRUIT PACKING HOUSE NEAR MEDFORD, ROGUE RIVER VALLEY, OREGON

Courtesy of Oregon Agricultural College

Iron Age Potato Planter



If you are thinking of buying a Potato Planter, before doing so get our catalog, fully illustrated describing the

Iron Age Potato Planter

READ THIS LETTER

Portland, Oregon, R. F. D. No. 1, February 2, 1909.

R. M. Wade & Co., Portland, Oregon.

Gentlemen: In reply to your question as to how I like my **Iron Age Potato Planter**, which I purchased from you last spring, will say that I am very well pleased with it. I have used the ——— and ——— potato planters, but as they were only guaranteed to plant 90 per cent it was not satisfactory to me, and I was willing to pay a little more and get a machine that, when I finished planting, I knew that my entire crop was in.

Another very important feature with the **Iron Age Potato Planter** is the fact that it will not bruise the seed while planting, and you can plant much larger seed than you can with the ———, ——— or ——— Planters.

The machine is durable and will do exactly what the factory claims for it. If you have any farmers inquiring about the machine and wish to refer them to me, I would be very glad to have you do so.

Yours truly,

(Signed)

GEO. GRADT.

Note—We leave the names of planters blank; if you want to know Mr. Gradt will gladly tell you.

This letter is only one of the great number that we receive from prominent potato growers indorsing the Iron Age Potato Planter

USE THIS COUPON

R. M. Wade & Co., Portland, Oregon

Without obligating myself, I would like to receive detailed information regarding the Iron Age Potato Planter.

Name

Address

WRITE TODAY

R. M. Wade & Co.

Implements and Vehicles

322 Hawthorne Avenue, Portland, Oregon

Old Established

Up-to-Date

MINIMUM TARIFF—Information from Washington gives us to understand that the existing tariff in Germany on American apples will remain, as now, under special agreement, which is about fifty cents a barrel. This information is very gratifying on account of the uncertainty that has

existed for some time in reference to what might be the position taken by the German government. On account of this uncertainty exporters have been conservative in shipments to German markets. Had the rate been raised on apples entering these markets it certainly would have limited the quantity; consequently, it is hoped and expected that from now on apples will be exported to Germany in greater quantities than ever before. This is very gratifying to the fruit industry and must

meet with the satisfaction of every American citizen, for the reason that the relationship between Germany and the United States government has always been friendly.

MOSIER

Also called East Hood River
FRUIT LANDS

In large or small tracts. Some very good land at low prices at present. Good growing community. Six miles east of Hood River. Parties wishing to buy will do well to write or see

GEORGE CHAMBERLAIN
MOSIER, OREGON

FOR SALE

The best apple orchard in this county. Twenty acres, all in full bearing, with every prospect of a large crop this season. Price is less than is asked for orchards just planted. For particulars address the owner, Box 233, Independence, Oregon

For Sale—White Salmon Apple Land

There is nothing better than White Salmon. This new district just opposite Hood River has a wonderful future. It is so new that you can get in on the ground floor and be in the finest location in all the West. We have for sale 160 acres of the finest apple land in the White Salmon Valley; lays extra well, soil the very best, near railroad station. Price \$100 per acre for the whole tract, or in forty-acre tracts at a slight advance. Part cash; balance terms. Address owners,

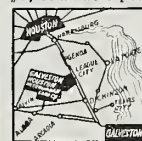
ZOLLINGER & BOSSERMAN

313 Corbett Building

Portland, Oregon

Orange and Fig Orchards Pay Immense Profits

Here's a chance for the small investor, as well as the capitalist, to invest his capital or savings where it will earn big profits. Pay as little as \$5.00 down and an equal amount monthly and you become part owner in a Fig and Orange Growing Company owning 7,000 acres of the best land in the world for these fruits—land that will earn, when in full bearing orchards, from \$500 to \$1,000 an acre per year. Company will plant trees, cultivate the land and gather and market the fruit. You participate in these immense profits without leaving your present occupation or location. This is the opportunity presented to you in the purchase of the Acre-Bonds we are offering investors. No such opportunity ever offered before. If you come in now your investment should double, treble and quadruple in value from the advance of the land alone, besides you can share in profits almost beyond belief. The Acre-Bond absolutely guarantees you against loss. Land is located midway between Galveston and Houston in the heart of the fruit belt of the balmy South, where rainfall is abundant and irrigation unnecessary—that's why you can buy at one-tenth what such land is worth in irrigated districts. But you will have to pay more next year twice as much more the year following. Now is the time to buy. Company composed of the leading business men and bankers of the South conservative men who never back a failure or a fake. This is a business proposition that will appeal to every person seeking profitable investments. Handsome illustrated booklet explains entire plan with facts and figures. We will send it free if you will write today.



THE AMERICAN LOAN & MORTGAGE CO.
256 American Nat'l Bank Bldg.
HOUSTON, TEXAS

**You Will
Want to
Read This
Book
It's FREE**

Figs and Oranges
in the
Galveston-Houston
District

MOSIER ORCHARDS

On Easy Payments

Do not be satisfied with 4 per cent interest on your savings. That is what your bank will give you.

The Willamette Trust & Investment Co.

Offers you the opportunity of buying five acres or more of their COLUMBIA ORCHARD TRACT, which is the finest orchard land at MOSIER, on the easy payment plan.

First, you make a small cash payment on the purchase price of a five or ten-acre tract, and instead of placing your savings in the bank, where they will only pay you 4 per cent interest, pay us \$25 to \$35 a month until your land is paid for.

Second, we set the land you buy to the best varieties of commercial apples and take care of the same for you for five years.

Last, but not least, you do not pay interest on deferred payments, and we pay the taxes.

FOR FURTHER INFORMATION ADDRESS

BROCK & ZIEGLER

Sales Agents for Willamette Trust and Investment Company

LUMBERMEN'S BUILDING

PORTLAND, OREGON

COLORADO POTATO BEETLE IN THE Northwest.—J. M. Aldrich of Moscow, Idaho, writes thus in regard to the common "potato bug" of the Mississippi Valley and the East generally: Notwithstanding the fact that it was originally a native of Colorado, it has never spread westward to any extent until very lately, being even now unknown in its native state in the region west of the continental divide. With the exception of two mountain valleys of Montana, the only part of the Pacific slope where it has obtained a foothold is in the northern part of Idaho, southeast of Lewiston. Here it has been present four or more years, spreading each year, until now it occupies a territory approximately twenty-five miles east and west by fifty north and south. Within this large area there were few potato patches not infested last summer, and the end is not yet, for there is every prospect of a greater spread this year. In Eastern Washington and Northern Idaho growers of potatoes should be very watchful for the first two or three weeks after the vines come up, destroying any adult beetles that may appear, together with any eggs that they have laid. In several cases

around the edges of the infested region this was enough to exterminate the insect for the year. The adult beetles winter in the ground, often at a considerable distance below the surface. They emerge about the time the earliest potato plants are coming up, but often do not readily find the food plant, and are then likely to take wing, driven by hunger, and may fly several miles when once in the air. Hence, around an infested area they will be dropping down out of the air along in May, and here and there one will succeed in finding a potato patch and will lay eggs and thus start a colony. It is in the hope of securing the extermination of many of these colonies that this article is written. Since many natives of the West have never seen the insect, it may be well to add that the adult beetle is a thick-set, reddish insect about half an inch long, with the back striped with black and yellow. The most certain way of identifying the beetle is to show it to a neighbor who formerly lived east of the mountains. The usual answer of such a person is: "Why, man, I've collected them by the washtub full; I tell ye, I've just seen the vines covered," etc.

WHEN ARE YOU COMING WEST?

Fortunes are being made now by hundreds on small fruit ranches in the West. If you are interested in the famous fruit sections, about Hood River, Ashland, Medford and other equally famous sections, send in the attached coupon. It's the soil, climate and scientific culture that makes Oregon and Washington apples famous.

The Pacific Monthly Company,
Portland, Oregon.

Enclosed is 25 cents, for which please send me three recent numbers about famous fruit sections of the West.

Name _____

BF Address _____

Buy and Try

WHITE RIVER FLOUR

MAKES

WHITER, LIGHTER BREAD

BITTER ROOT VALLEY ORCHARD LANDS

A SAFEGUARD AGAINST WANT

Sold in tracts to suit

Homeseeker, Non-Resident and Investor

Address all correspondence to Home Office of

**THACHER-TORRENCE GENERAL LAND
AND INVESTMENT COMPANY**

Agents wanted

HAMILTON, MONTANA

WASHINGTON LANDS

OREGON LANDS

THE LAND OF OPPORTUNITY

With well established agencies throughout the States of Washington and Oregon, we are admirably equipped for serving the best interests of land seekers. **FRUIT AND WALNUT LANDS** we offer for sale without prejudice as to location. Orchards in bearing or land in the rough. Large and small tracts. Properties referred to cover lands in the Yakima, Walla Walla, Hood River, Rogue River, Willamette Valleys and other famous sections, also in newer localities which promise well for the future.

FARM LANDS. Our offerings include improved and unimproved farms and stock ranches. Bottom lands and bench lands; also "little farms" and garden lands adjacent to the cities.

We have a number of large tracts particularly adapted for colonizing and cutting up in tracts to suit. We invite correspondence.

TOOKER-READ LAND CO.

Offices, Henry Building

PORTLAND, OREGON

APPLES

PLUMS

PEARS

PEACHES

PRUNES



A Promise of Good Returns

The LAND OF OPPORTUNITY

LOCATED across the Columbia River from Hood River, Oregon, the White Salmon Valley offers the greatest opportunities of any land on earth to fruit growers. Where apples, cherries, pears, peaches, prunes and strawberries grow to perfection. A few dollars invested in fruit land today will return to you in a very few years sixty-fold. The soil, climate, water and scenery are unsurpassed by that of any country. Build a home where you can enjoy peace and plenty the remainder of your life.

We have some bargains in orchard and general farm lands in and near White Salmon, also large and small bodies of timber land, cheap.

WRITE US FOR DESCRIPTIVE MATTER AND PRICES

Estes Realty & Investment Co.

WHITE SALMON, WASHINGTON

BERRIES

CHERRIES

STRAWBERRIES

NUTS

Fine Apple Orchard

One of the show places of famous Mosier district, adjoining Hood River; 297 acres, 160 already in fruit. Splendid tract for subdivision. Half interest for sale cheap. For description and price, write

McCargar, Bates & Lively

318 Failing Building
PORTLAND, OREGON

IRRIGATED LAND

The greatest fruit and alfalfa valley in America is now open for settlement at Fort Stockton, Texas; rich alluvial, natural flow of pure spring water exceeding 55,000,000 gallons per day for irrigation and domestic use; water on land now; assured profits of from \$100 to \$1,000 per acre; no drought; no crop failures; finest all year 'round climate in the United States; altitude 3,050 feet above sea level. Fort Stockton is county seat of Pecos County and important division point on the Kansas City, Mexico & Orient Railway, now under construction; population now 1,000; will soon be a city of from 10,000 to 15,000. Greater opportunities for homeseekers and investors than were ever offered in the older irrigated districts, where orchards are valued at from \$2,000 to \$5,000 per acre. Choice locations open to those who investigate now. Low rate excursions first and third Tuesdays of each month. You cannot afford to buy land anywhere without seeing Fort Stockton. For full information address FORT STOCKTON IRRIGATED LANDS CO., 303 Fidelity Trust Bldg., Kansas City, Mo.

ADVOCATES DOUBLE DISKING IN "DRY FARMING"

WHILE Congress is struggling with the question of conservation of the national resources and the extension of the system of irrigation to the semi-arid regions of the West, the Western

The methods employed to fertilize, to properly treat and cultivate the soil, and to conserve and effectively use the rainfall that comes, is called "dry farming." The most important factor in "dry farm-



farmers are grappling with the problem very effectively and in an entirely different way.

Out in Montana, Idaho, Colorado, Wyoming and other states is much land which, owing to insufficient rainfall, was classed for a long time with the non-producing land. It was thought that it would not raise enough to justify a farmer's time and labor. That, in most cases, such land can be made not only sufficiently productive but highly profitable, by the application of scientific methods, is now thoroughly established.

ing" is probably in using the best tools for preparing the soil. The experiment stations of these Western states have been largely responsible for the bringing to a scientific basis the system of "dry farming." And they have all urged that the land be double disked. This can be done in two ways, by using the old style single disk plow and going over the land a second time; or by the more up-to-date way, as shown in the illustration of using a "Cutaway" Double Action Harrow, which accomplishes all in one time over. They have won a very wide

SNAPS

IN DELTA COUNTY, COLORADO, where the prize-winning fruit was grown this year. Buy a fruit ranch NOW, while the prices are low, and grow into wealth with the growth of your orchard. Buy NOW, before the new railroad gets in.

40 acres valley land 2 miles out; 15 acres alfalfa, 10 acres grain land, 2 acres bearing apple orchard, 1,100 boxes last season; all kinds small fruit; fair buildings; good water right. Price.....\$4,000
20 acres valley land 2 miles out; double water right, 2-room log house, frame house, cellar, cistern, stable, poultry house; 1 acre 8-year-old apple orchard, 4 acres young apples, 1 acre bearing peaches, 25 bearing trees, mixed, all kinds; ¾ acre berries, mixed; team, wagon, cow; all implements for ranch; owner takes trunk only; splendid location, R. F. D., telephone; no waste. A snap at.....\$4,500
80 acres valley land 2½ miles out; R. F. D., telephone; 18 acres fruit, 1,000 boxes apples last season; 3 acres hay; good 3-room frame house, stable, outbuildings, etc.; good water right. A bargain at....\$6,000

40 acres mesa land 2¾ miles out; frame house, stables; 2 acres bearing orchard, mixed; 32 acres alfalfa; good water right. Priced low.\$3,800
40 acres 2 miles out, valley land; R. F. D., telephone; 1,000 Jonathan apples 5 years old, 700 Elberta peaches, 75 mixed bearing trees, 25 sweet cherries, 25 apricots, 1,000 dewberries, 1,000 strawberries, 500 grapes; 4 acres alfalfa; 4-room frame house, outbuildings, etc.; close to school. A ranch that will be worth \$40,000 when fully developed; good water right and a splendid location. A bargain at.....\$8,000
40-acre relinquishment close in.....\$400
120-acre relinquishment; 10 acres cultivated; 2-room house; ditch and partial water right. Only.....\$1,200

WRITE FOR FURTHER INFORMATION AND SPECIAL TRANSPORTATION

CEDAREGE REALTY CO.

E. D. Smith, Manager

CEDAREGE, COLORADO

THERE IS BUT ONE HOOD RIVER THE HOME OF BETTER FRUIT

You have already heard of its famous fruits and wonderful income-paying orchards, its lovely climate and desirability for a home, but—

"THE HALF HAS NOT BEEN TOLD."

FOR ONE ACRE OR HUNDREDS, IMPROVED OR UNIMPROVED,

IT WILL PAY YOU TO WRITE OR SEE

HARTMAN & THOMPSON

Chamber of Commerce, Portland, Oregon

Or J. F. BATCHELDER, Hood River, Oregon

reputation among these farmers who find in them the ideal tool for their kind of work. Mr. M. J. McGlynn, of Sidney, Montana, a prosperous farmer, wrote the Cutaway Harrow Company, Higganum, Connecticut, the makers of these famous tools, the following letter, which shows how useful a "Cutaway" Double Action Harrow is to them.

Sidney, Montana, December 21, 1909.
Cutaway Harrow Company, Higganum

Gentlemen: Enclosed you will find a photo of one of your A-6 D. A. harrows at work on tough, heavy, buffalo grass-sod breaking, preparatory to sowing flax—photo taken June 24, 1909.

I disked seventy-five acres for crop last spring, using four bronchos, and they handled it easily. It is a great improvement, even on double disking with the old style single discs, and I consider it the most valuable piece of machinery I have.

I send you this photo, these statements, and a reference to pages 60 and 61 of Montana's Farmers' Bulletin No. 1 (in which your machine is mentioned), to lend force to the suggestions I wish to make. You have, no doubt, heard of the agitation or movement known as "dry farming." I am a "dry farmer." I consider this "dry farming" movement a great chance for you, and a world of good for the farmers. The bulletin referred to advises the use of your machine, and all lecturers on this subject advocate double disking.

J. A. McGLYNN.

Full particulars regarding the Cutaway tools and their many uses can be had by writing the Cutaway Harrow Company, Higganum, Connecticut, mentioning this paper.

FOR SALE

Choice ten-acre tracts Okanogan fruit land. First-class upper bench, near government canal; 1,280 feet altitude. Well water in gravel, thirty feet, pure. Planted to yearling apple trees; best red winter commercial varieties; also tracts not planted. Ready to irrigate. Great Northern Railroad now building in Okanogan Valley. Prices and terms right.

W. E. KIRKPATRICK

Epley, Wash. Okanogan County

RESOURCES AND OPPORTUNITIES

There is more doing in the West today in the way of progress and development than in any other section of the United States. If you are interested and want further information about opportunities and resources of a vast new empire, use the coupon.

The Pacific Monthly Company,
Portland, Oregon.

Find enclosed 25 cents, for which please send me three recent numbers containing articles about resources and opportunities in the West.

Name.....

BF Address.....

The L-P Land Co.

Has many excellent opportunities for investors to secure desirable
LANDS AT LOW PRICES

Upper Valley and Upper City Properties
ARE OUR SPECIALTIES

Telephone 259

12 Smith Block

HOOD RIVER, OREGON

FOR RENT

Eight acres apples, cherries and Bartlett pear trees. Good land for celery and onions.

E. M. D.

Beaver Dam Farm SANDY, OREGON

FOR SALE: FINE APPLE LAND

Part in bearing; splendid location for summer homes. Ideal climate. Telephone, electric light available. On main road, three miles from station and express office; rural free delivery; eight miles from Watsonville. Prices low; terms easy. For further information address P. O. Box 285, Watsonville, Santa Cruz County, California.

Apple Land Near Goldendale, Washington

A newly developing fruit district on the Spokane, Portland & Seattle Railroad, adjacent to The Dalles and Hood River, Oregon. It has been demonstrated that there is some of the best apple land in the world to be found in the famous Klickitat pine belt near Goldendale. Two large canals will be built overlying these lands in the near future. Just think! We can sell you No. 1 good apple land for \$12.00 to \$30.00 per acre. Careful selections made for non-residents.

GOLDENDALE LAND AND INVESTMENT COMPANY



G. Y. EDWARDS & CO.

HOOD RIVER, OREGON

Our Specialties:

Fruit Lands, Orchards and Raw Lands

Get our literature and list of orchards

WRITE US FOR PARTICULARS

An Expert Opinion Before You Buy Land

Is it not as important to know what the possibilities of your land are, as to know that your title is clear? If in doubt about the title you would consult a lawyer; why not consult an expert about the land?

I am a graduate of the Cornell College of Agriculture, have a thorough knowledge (from experience) of conditions prevailing in the Hood River Valley; and, furthermore, I have no business connections or obligations which would prejudice or constrain my judgment.

Synopsis of subjects included in scope of report furnished on inquiry.

I also give advice on pruning, fruit disease treatment, and the other phases of orchard work.

J. L. ROBERTS, B. S. A.

Telephone 3253 M

HOOD RIVER, OREGON

The School of Size is Good } Investigation will
" " "Quality" Better } prove we have both
" " "Having Both" Best }

"Business Training in Business Methods by Business Experts"

Behnke-Walker

The Leading Business College

Portland, Oregon

WHEN WRITING ADVERTISERS MENTION BETTER FRUIT

HOOD RIVER

the valley of
Apples and Strawberries



A TRAINLOAD OF APPLES EN ROUTE TO NEW YORK, PACKED
BY HOOD RIVER APPLE GROWERS' UNION, SOLD TO STEIN-
HARDT & KELLY FOR \$2.50 TO \$3.35 NET, F. O. B. HOOD RIVER

Hood River grows the finest apples and strawberries of any section in the
wide, wide world, and commands the highest price. Excellent soil, grand-
est scenery, purest of mountain water, with 365 days a year filled with
pleasure, work and happiness. A Hood River booklet will convince you.

ADDRESS

Secretary Commercial Club, Hood River, Oregon

LOS MOLINOS

Tehama County California, *is the place*



Diversion Canal, Los Molinos Land Company

Here, taken on the ground of the Los Molinos Land Company, are two pictures.

The upper is one of the diversion canals, where water runs so fast, there is so much of it.

Fish thrive where water is plenty and sweet.

There is a United States fish (salmon) hatchery on this stream—another proof of never-failing water.

This picture shows second crop of potatoes between fig and almond trees.

Potatoes went \$400 to the acre. Meantime trees getting ready to bear. Only two years old when picture was taken. Bear at three.

These pictures demonstrate rich soil, best California climate and abundant irrigation water.

We have them all at Los Molinos.

Do you really desire to possess land in the most favored place for the home, the most profitable for cultivation? Do you mean it? Then study these conditions and come verify them for yourself.

For the home you want a wholesome, attractive, restful spot, removed from fear of flood, storm, cold, or desert loneliness. You are tired of city life. But you want a home near people and the privileges of civilization.

To get profits from the land you must have warm sunshine, rich soil, and water for irrigation.

The soil must be easy to work, the water abundant and easy to apply.

Very important also is drainage—to make home healthy and the land sweet. Therefore you must have a deep, fertile soil, drained to the depths.

GET HOME AND LAND

Where grows every fruit, plant and tree found on the mainland of the United States.

Where things grow outdoors every month in the year.

Where river and electric lines compete with steam railroads.

LOS MOLINOS IS THAT PLACE

There are few such spots on earth where land is so low priced and water so plenty and cheap.

The land allotted for sale will soon be taken. Investigate now.

It is part of an old Spanish land grant of many thousand acres. The Los Molinos Land Company has lately put these lands upon the market. They are owned absolutely by the company.

With the land goes a water right which brings the water to your land. The canals are built and the water running in them. You can buy on easy terms. Only good citizens are wanted.

There is nothing better in California or in the world.

We take pleasure in answering your inquiries. Write to

Los Molinos Land Company

Los Molinos, California



Second Crop Potatoes on Land of John Rissi, Los Molinos, California

THE OREGON APPLE ORCHARDS CO. ARE
SELLING

ORCHARD TRACTS

*That Possess Every Requirement of
First-Class Apple Lands*

They lie on the east side of the Coast Range of mountains, at an altitude of 800 feet, and are in what is known as the frostless belt. They are also protected by hills higher up from the winds of the west and south. They have perfect air drainage, also water drainage.

The soil is a rich and deep loam, with no hardpan or rocks, and our lands are all cleared of timber and stumps, so are ready for the planting of the trees, losing you no time for the ground to be cleared. We expect to have the entire tract planted to trees this fall.

The land is offered for sale in tracts of five acres or more at \$250 per acre, planted and cared for for one year, and on easy payments, viz: One-fifth down and two per cent per month on the balance until paid for.

It lies in Benton County, adjoining Alpine station on the Corvallis & Alsea River Railroad, with R. F. D., rural phone, church, school, stores and all at the door right now (not to come in the future). We are also in the rain belt, getting an average of forty-four inches of rain each year, and never suffer from lack of moisture.

Our contract is a liberal one, granting deed when half paid for. Extension of time for sickness. Free deed in case of death. A receipt for your money in case you are unable to continue your payments, this receipt being accepted at face value at any future time on a new purchase. With all this, our section is less liable to apple diseases than most others, and our trees mature earlier on account of the long growing season.

Write us and let us give you facts about our section and also show you that we are selling our land for just half what others are charging. You read "Better Fruit," so you know what the returns are from a first-class apple tract.

Oregon Apple Orchards Co.

Portland, Oregon

N. B.—We want a few salesmen to represent us.

CHEHALEM MOUNTAIN ORCHARDS

One Thousand Acres

Of choicest orchards, subdivided in five and ten-acre tracts, planted to commercial varieties of apples, pears, cherries and walnuts and taken care of for a period of five years or longer if desired. The leading horticulturists of Oregon speak in the highest terms of this land as to the adaptability of its soil and location for orcharding, especially to its elevation above the sea level and frost belt.

See Their Letters in Our Office

In regard to convenience for marketing and communication with Portland, study our booklet, containing map of the Willamette Valley from Portland to Salem, which will be mailed upon request to any address free of charge. Orchards located in the foothills of Chehalem Mountains

15 to 17 Miles Southwest of Portland

Connected by the Southern Pacific Railroad, with two stations, Rex and Frank, on the land. The Oregon Electric Railroad, now in course of construction, will be in operation in a few months and will traverse our property. For prices and full particulars call at office. Easy terms of

**10 PER CENT CASH
\$15 PER MONTH**

Or liberal discount for cash. Select your tract at earliest opportunity, while you have first choice.

I am interested in your orchard land. Please send me your booklet.

Name

Address

The Crossley Co.

Rooms 708-709 Corbett Building
PORTLAND, OREGON



When you get to Hood River
stop at the

MT. HOOD HOTEL

Trains stop directly in front
of hotel. Bus meets all boats

Automobile service daily for
Cloud Cap Inn during months
of July, August and September

All Fruit Growers



Make
Their Headquarters
at

The Portland

H. L. BOWERS Manager Portland, Oregon

LEARN MUSIC IN YOUR HOME Without a Teacher

By the wonderful Simplex copyrighted system any one of ordinary intelligence can quickly learn to play piano or organ. You need not know the first principles of music. By no other method can you learn music so quickly and thoroughly as by the Simplex system. There is nothing like it. The study is easy and fascinating. In just a few weeks by this method you can play the ordinary popular and classical music. By our system you can study during spare time in your home and quickly become a capable musician.

We have delighted students in every state and territory. Many of our students, after six or eight lessons, begin playing piano or organ in church and Sunday school. Others write that after one lesson they are able to play a waltz from memory. Another student says: "Everything is so simple, and a student learns so fast that he himself cannot realize it."

If you wish to become a skilled musician, write at once for our free book, "Learn Music in Your Home Without a Teacher." Address Simplex School of Music, Conservatory 456, Kansas City, Missouri.

CARPENTERS

The Honeyman Hardware Company of Portland, Oregon, has sent a hurry-up telegraph order for sixty-eight more self-setting planes to the makers, Gage Tool Company, Vineland, New Jersey. These planes are in demand and our local dealers can get them of seven other Portland dealers, as well as those in Oregon City, Hood River, Seattle, Tacoma and other Coast cities.

SPRINGVILLE

Is to Utah

What Palisade is to Colorado

The Natural Fruit Center

Buy cheap lands now

ROE A. DEAL Springville

Parties desiring large tracts of land in Oregon or Washington for colonization or platting will do well to address J. A. Benson, Union Stock Yards, Portland, Oregon.

A well referenced, scientific horticulturist desires a position. Address A. B., care "Better Fruit."

FINE BABY CHICKS EIGHT CENTS EACH

Leghorns, Wyandottes, R. I. Reds, Minorcas, Langshans, Orpingtons, Plymouth Rocks, etc. All fine stock. Partly grown chicks, 30 cents each. Eggs for hatching, \$4.00 per 100. We guarantee safe arrival anywhere. Booklet free. CULVER POULTRY FARM Benson, Nebraska, U. S. A.

WHEN WRITING ADVERTISERS MENTION BETTER FRUIT

THE DALLE'S NURSERIES

(Successors to R. H. Weber)

GROWERS OF

Choice Fruit and Ornamental
Trees, Grape Vines, Small
Fruit Plants and Shrubbery

We do not employ Agents, but sell
DIRECT to the Planter, making
Commercial Orchards a specialty

All correspondence should be addressed to

THE DALLE'S NURSERIES
122½ Grand Avenue
PORTLAND, OREGON

Remember, our Trees are grown strictly
without irrigation.

\$1.25 PER WORD

Inserts Classified Ads

In 36 leading papers in United States. Send for list. The Dake Advertising Agency, 427 South Main street, Los Angeles, or 12 Geary street, San Francisco, California.

PRINTING

THAT PLEASES THE FRUIT GROWERS

Our unexcelled facilities, with the high-class service rendered you, make this the place to buy your printing. Send us a trial order. "Better Fruit," printed and designed in our establishment is a criterion of our ability

F. W. BALTES & COMPANY

Telephones
HOME A1165
MAIN 165

FIRST & OAK
PORTLAND

THROUGH THE SOUTH SEAS WITH JACK LONDON

Jack London saw many strange sights in his year's cruise on the "Snark." Not all of us will have the opportunity of making such a voyage, but we can enjoy the enchantment and novelty of such a trip through the descriptions of such an artist as London. The series of travel sketches is running now. Send the coupon and get started right. The Pacific Monthly Company, Portland, Oregon.

Enclosed is 25 cents. Send three recent issues containing Jack London's South Sea articles.

Name _____
BF Address _____

Carlton Nursery Co.

CARLTON, OREGON

Growers of a complete line of nursery stocks. Apples, pears, cherries, prunes, walnuts, plants, etc. Satisfaction guaranteed. We are suppliers of commercial plantings. Before placing your orders be sure and send list of your wants, asking for quotations, as we know we can interest you.

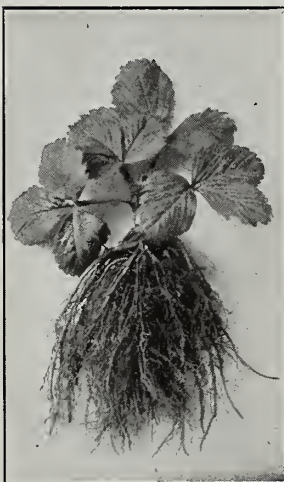
Catalogue upon Application

A few hundred Bartlett and Beurre d'Anjou pears, Lambert, Bing and Royal Anne cherries for spring planting.

Will have our usual offering of apple, pear, cherry and peach trees for fall of 1910.

H. S. GALLIGAN

Phone 2002K Hood River, Oregon



CLARK'S SEEDLING

The Berry that made Hood River famous

The stock for spring planting is the largest and I believe the best that I have ever grown. Prices and further information furnished on application.

A. WHITEHEAD
HOOD RIVER, OREGON

Hood River Nurseries

Have for the coming season a very complete line of

NURSERY STOCK

Newtown and Spitzenberg propagated from selected bearing trees. Make no mistake, but start your orchard right. Plant generation trees. Hood River (Clark Seedling) strawberry plants in quantities to suit. Send for prices

RAWSON & STANTON, Hood River, Oregon

A GLIMPSE INTO THE MAILBAG OF THE EDITOR

Department of Agriculture and Technical Instruction for Ireland
Dublin, Ireland, February 17, 1910.

Editor Better Fruit:

I understand that the issue of your paper, "Better Fruit," for September, 1909, contained illustrations of several different types of presses used in packing apples. As this department is much interested in the apple packing industry I should be much obliged if you would send me fifty copies of the issue of your paper referred to. The department will of course defray the cost of the papers and carriage, and on hearing from you I will send you an order for the amount of same. We should be glad to receive the copies of "Better Fruit" as soon as possible. I may add that we are subscribing through H. M. Stationery Office for future issues of your paper. I am, sir,

Yours faithfully,

Thomas Butler,

Deputy Superintendent of Statistics and Intelligence Branch.

◆ ◆ ◆

Oregon Development League
Portland, Oregon, January 24, 1910.

Editor Better Fruit:

I want to assure you that I appreciate "Better Fruit," and so does every member of our executive committee and every active member of the Portland business community. You are certainly doing a wonderful work in the development of this state.

Sincerely yours,

Tom Richardson, Manager.

◆ ◆ ◆

Toppenish, Washington, January 13, 1910.

Editor Better Fruit:

"Better Fruit" for January is on our desk this morning, and certainly is a very fine edition. You people deserve the highest credit for the work you are doing. The Spokane Apple Show is certainly receiving all that is coming to it in this edition. Kindly send ten copies, with your bill. Our own ad. is very satisfactory, and we want to thank you

for the kindly mention you make of us on a later page. With kind regards, we are,

Yours very truly,
Washington Nursery Company.

◆ ◆ ◆

International Apple Shippers' Association
Chicago, Illinois, February 28, 1910.

Editor Better Fruit:

Yours of the 23d just received, and my desire to congratulate you upon "Better Fruit" and its growth is almost overshadowed by my disappointment at the possibility of your not being in Washington next week. While we differ in our views, I would like to have you there, so that we might have a fair stand-up fight and the best man win. I still hope that you will come on. If you get up as good an argument as you get out a paper I would certainly lose out, but I do not believe the subject would permit of your accomplishing this. There is no disputing the fact that you have the

AGENTS

Big money made selling our nursery stock; great demand; fine line.

Cash commission weekly.

CAPITAL CITY NURSERY CO.
Salem, Oregon

SALESMAN WANTED

To take our cash weekly selling complete line of fruit trees and ornamental shrubbery

Outfit free

Salem Nursery Company, Salem, Oregon

PROGRESSIVE HORTICULTURE

Describing Winfield Nursery Trees of Quality. With over fifty photographic views. Ready in February. Mailed free

GREAT REAGAN APPLE

The apples in this picture were taken from a bushel which contained only sixty-three apples, the average weight being about fourteen ounces each. They bear regular, very prolific, fruit blood red; solidity and quality places them at the head for export market. Plant now and you will be ready for the big export market opening to the United States.

Gold for Commercial Planters
COUPON

I am interested in Trees of Quality and will plant about.....trees.

Name

P. O.

State



"WINFIELD," THE GREAT BLACK-CAP RASPBERRY

Free with orders for The Winfield Nursery Trees of Quality. Originated here. Introduced solely by Th Winfield Nursery Company. No plants for sale this year. Given as premium with other stock for testing. Name "Winfield" by Hon. H. P. Gould of United States Pomological Society, who pronounces it most promising blackcap raspberry ever delivered.

THE WINFIELD NURSERY CO.

(INCORPORATED)

WINFIELD, KANSAS

J. Moncrief, President

J. B. PILKINGTON

P. O. Box 242 PORTLAND, OREGON

Grower and Importer of

FINE NURSERY STOCK, FRUIT, NUT AND ORNAMENTAL
TREES, SHRUBS AND ROSES

Have No Agents

Direct to Planter

Send for Catalogue


FRUIT GROWERS, YOUR ATTENTION!

Royal Anne, Bing and Lambert cherry trees; Spitzenberg and
Newtown apple trees; Bartlett, Anjou and Comice pears, and
other varieties of fruit trees.

A. HOLADAY

MONTE VISTA NURSERY

SCAPPOOSE, OREGON



Splendid Trees and Shrubs

FREE

We have made some remarkable offers in connection with our magazine in the past, but never one that compared with this. You will want to snap this one up quick. The collection we are going to give you, if bought at retail from a Nursery would cost you several dollars. We have contracted for a large number of these collections and propose to give the entire seven trees and shrubs away, absolutely FREE to new subscribers to The Fruit-Grower, for the purpose of creating a greater interest in horticulture. Here is the collection we offer you FREE:

No. 1—One Winter Banana Apple Tree—Fine, vigorous grower, fruit medium to large; smooth; color a bright golden yellow.

No. 2—One Liveland Raspberry Apple Tree—Best summer apple; orange-yellow; striped, splashed with rich red; flesh fine.

No. 3—One Lurie Grape Vine—Succeeds both north and south; vigorous; deep red; heavy bearer; berries large and tender.

No. 4—One Tulip Tree—A magnificent native tree of tall, pyramidal shape; tulip-like flowers; allied to the Magnolia.

No. 5—One Spirea Van Houttei—Finest of all Spireas. In May and June plant is covered with beautiful white flowers.

No. 6—One Hydrangea—Comes into bloom just when there is a scarcity of white flowers; blooms very freely.

No. 7—One Rose, General Jacquemont—One of the very hardiest and most popular; velvety crimson; very vigorous.

They are exceptionally fine one-year plants—will be carefully banded and sent FREE, all charges prepaid, to anyone who accepts this offer and sends us \$1 for 1 year's subscription to The Fruit-Grower, \$2 for 3 years, \$3 for 5 years, or \$5 for 10 years. You will be delighted with the collection, while each issue of The Fruit-Grower will be worth several times the year's subscription price to you if you are the least bit interested in farm, fruit or flowers. The January issue was our Annual Spraying Number; February issue our Annual Gardening Number—either issue worth \$1.00 to anyone who plants a tree or a bed of vegetables—we will send sample copies FREE as long as they last. The Fruit-Grower is acknowledged to be the world's greatest fruit and farm magazine, beautifully printed and illustrated, monthly, and consists of from 60 to 100 pages each issue.

This free tree offer is open to everyone—it is our greatest offer and effort to create more interest in horticulture and to make new friends for The Fruit-Grower. All we ask in addition to the subscription price is that you send us the names of five friends or neighbors who are also interested in horticulture, so that we may send them FREE sample copies of The Fruit-Grower to let them see what a helpful magazine we are publishing. Our magazine alone is worth more than the money you send, and we give the plants mainly to secure your good will and names of fruit-growers.

Read the description of the trees and shrubs and remember that you get all seven of them Free with a year's subscription to The Fruit-Grower. Send your order in today, or if you are not acquainted with The Fruit-Grower, we will send sample copy Free and beautiful illustrated circular showing trees and flowers in natural colors. In writing use coupon below; put names and addresses of five friends on separate sheet of paper. If you want specimen before ordering, simply sign your name and address and write the word "Sample" on Coupon.

**THE FRUIT-GROWER,
ST. JOSEPH,
MO.**

COUPON
The Fruit-Grower,
St. Joseph, Mo., Box 502
Enclosed find \$.....
for..... year's subscription
and FREE collection of Trees
and Shrubs as per your offer. List
of names is also enclosed.

Name.....
Town..... State.....

best paper of its kind in existence, and you may be sure that no one of my acquaintance, who needs such a publication, will be without it because of failure on my part to call their attention to it. With best wishes, I am,
Yours truly,
W. L. Wagner, President.

United States Department of Agriculture
Bureau of Plant Industry
Washington, D. C., February 23, 1910.

Editor Better Fruit:

A question arises here this morning as to who is secretary of the Northwest Fruit Growers' Association. I thought I would find a list of the officers in "Better Fruit," but find that you have omitted it from the later issues. In conference with others in the department, we have decided to enter a protest. We would like to have a list of the officers of the Northwest horticultural and fruit growers' associations kept standing, and changes made as occasion demands, so it would act as a ready reference. You would be surprised, perhaps, if you could see the mail that reaches the various divisions here in a day, with reference more or less directly to Northwestern horticultural conditions, and it is not always easy for one to answer at once as to who are the best men in the various sections, and usually one prefers to write the secretary of the district organization for general information. So, if it is not incompatible with the policy of "Better Fruit," we would be delighted if you would return to the old custom of carrying the list.

Truly yours,
E. R. Lake.

Richey & Gilbert Company
Toppensish, Washington, December 22, 1909.
Editor Better Fruit:

I desire to correct a criticism made a year ago of the Delicious apple. I am now fully persuaded that the apple which we handled as "Delicious" last year was not the Stark Delicious, though very similar to that apple in flavor. Our experience this year is quite different with the real Stark Delicious. As you know, we won the first prize of \$100 at the Spokane National Apple Show with the best ten boxes of Delicious apples. We have also sold quite a number of boxes of these apples at from \$3 to \$5 per box. The writer has examined the Stark Delicious quite carefully in one large orchard and finds the trees to be vigorous, strong growers. The Delicious apple, from the standpoint of quality and flavor, is hard to excel. Its flavor is peculiarly aromatic, pleasantly sub-acid, almost sweet, and particularly enjoyed by many who do not enjoy the acid, tart varieties such as the Spitzenbergs. With such, the Delicious apple will stand at the head of the list. I look for a strong demand for this variety for many years, though I do not think, as a commercial variety, that it should be planted in large areas. I believe as soon as we handle apples by the thousands of carloads instead of by the hundreds, as we do now, the Winesap, Rome Beauty and similar varieties will make the best net returns. The Delicious apple ripens a little too early in this section, but of course this can be overcome to some extent by packing at the proper season and placing in cold storage.

Respectfully yours,
H. M. Gilbert.

SPLENDID CLUBBING OFFER.—One of the best magazines published in the West, the Sunset, which tells all about Western life on the Pacific Coast and the Northwest, the possibilities and opportunities, not only in fruit growing, but in all other lines of business, and "Better Fruit," the best fruit growers' magazine published in the world, both for \$1.50.

1,000,000 Strawberry Plants Clark's Seedling

THE KIND THAT MADE
HOOD RIVER FAMOUS

Rates:

100 plants \$1.25
1,000 plants 5.00
5,000 to 10,000 plants at
\$3.00 per thousand
Large orders at special prices

THE QUALITY OF OUR
PLANTS IS THE BEST

E. L. KLEMER

Hood River, Oregon

"THE OLD RELIABLE"

Albany Nurseries

INCORPORATED

ALBANY, OREGON

LARGE STOCK, FIRST-CLASS TREES

Place Your Orders Now

CATALOGUE FREE

MORE SALESMEN WANTED

WE WERE AWARDED

Gold Medal

AT THE

Alaska-Yukon-Pacific Exposition

In Seattle, 1909

FOR DISPLAY OF

NURSERY STOCK

The Sunnyside Nursery Company

Incorporated \$100,000

Main Office and Nurseries at Sunnyside, Wash.

**Newtown
Spitzenberg
Winesap**

And all the leading varieties of apples still in stock.

Stock is being rapidly depleted and orders should be placed early.

Yakima Valley Nursery Co.

North Yakima, Washington

Office 9 Clogg Bldg. Catalog

Mr. Orchard Planter

Can you afford to plant trees without investigating conditions surrounding their growth? Ascertain for yourself as to whether or not they are grown by men who thoroughly understand their business. Our trees are

GROWN BY IRRIGATION

In the famous Yakima Valley, by competent men, long experienced in the business.

Write for catalogue,

Yakima Valley Nursery Co.

North Yakima, Washington

LANE COUNTY FRUIT GROWERS' ASSOCIATION held its annual convention at Eugene, Oregon, Saturday, January 8, and elected officers for the year. In point of numbers and interest manifested in the work of fruit inspection and elevation of grades, also the results in berry farming, this was the best meeting yet held. A proposal was made that the fruit growers of this section unite and give a great apple and fruit fair in Eugene at the close of the season, which was given a hearty reception. President McCornack delivered a strong address counseling growers to improve the quality of their output, as the county is full of common fruit products. "The fruit industry here," he said, "is in its infancy, but it is a very healthy, robust, promising infant. The infant industry went to the Salem Cherry Fair with an apronful of cherries and came back with a blue ribbon around her neck. She went to the Albany Apple Fair with a pocketful of apples and came back with another blue ribbon. Again she went to Portland with some big red apples and returned with a laurel wreath and was crowned apple queen. We raise prize-winning fruit, but we do not raise enough of it. How can we produce a larger per cent of fancy apples? First, location of your orchard; second, suitable varieties; third, proper cultivation; fourth, pruning; fifth, thinning. The last is a pain-maker, but it must be done; better hire some one who knows how, while you go fishing; it will be money in your pocket next year." Officers elected are: H. F. McCornack, president; J. Beebe, vice president; J. O. Holt, secretary.

THE FRUIT SHOW held in Silverton, Oregon, recently was just such a demonstration as the fruit growers of that vicinity have needed, says the Appeal. Something to stir them up and get them in the habit of perfecting the fruit culture in and around Silverton. Hood River has established a reputation of being the best fruit country in the West simply because the growers have gone at it systematically. When Silverton gets this habit we will have Hood River entirely outclassed, for we have every advantage—better climate, better soil, larger acreage, in fact, everything except the care of the fruit.

HOOD RIVER STRAWBERRY PLANTS

The genuine Hood River plants, Clark seedling. Grown and propagated in Hood River. The quality is the best, grown from thrifty mother plants on virgin soil. The Hood River berry is the greatest shipping berry grown in the world and brings the highest price of any variety grown in the Northwest. I still have a fair quantity on hand, but if the demand keeps up I will soon be all sold out, so order early if you want plants to set in April or May. My prices are reasonable; 100 plants, \$1.25; 1,000 plants, \$5; 5,000 to 10,000 plants at \$3 per thousand. I will quote special prices on larger quantities. Plants set this spring will bear a good crop next year. Address E. L. KLEMMER, Hood River, Oregon.

420 Acres Devoted to Nursery Purposes

THE WOODBURN NURSERIES

Established 1863 by J. H. Settlemier

Grower of Choice**Nursery Stock****F. W. SETTLEMIER**

Woodburn, Oregon

LAYRITZ NURSERY

Victoria, British Columbia

Headquarters for

CHOICE NURSERY STOCK

in British Columbia

Cox Orange Pippin

The fancy dessert apple of the very highest quality our specialty

GET CATALOG AND PRICE LIST

WHEN WRITING ADVERTISERS MENTION BETTER FRUIT

**SPRING SHIPMENTS
NOW ON**

But we are already planning the biggest selling campaign in our history for fall 1910 and spring 1911.

We told you in our last ad of our enormous planting for next season's selling.

Those figures are almost beyond believing, but they are all true. A year or two ago they would have almost "paralyzed" us, for we would not have known when we would dispose of the stock.

It's different now. Our stock has proven itself in so many localities and has "made good" in the hands of so many thousands of customers that we have difficulty in growing enough stock.

This year we've planned to meet the demand. If five million apples, two hundred and seventy thousand pears, one hundred and fifty thousand cherries, and a million four hundred thousand peach, plum, prune and apricot will help any, we will be ready. That's our plant for 1910, besides seedlings, seeds, etc.

Watch for our salesman, send for our catalogue, and write us your wants.

**Washington
Nursery
Company**

TOPPENISH, WASHINGTON

Agents Everywhere

More Wanted

A REPUTATION TO SUSTAIN

**VINELAND
NURSERIES
COMPANY**

PROPAGATORS OF

**RELIABLE NURSERY
STOCK**All stock budded from bearing
Trees, Fruit and Ornamental

CLARKSTON, WASHINGTON

**For Northwest Fruit Growers
in General**

A FULL STOCK OF

**Spitzenberg
Jonathan, Winesaps
Rome Beauties
Etc.**

31 YEARS IN BUSINESS

Milton Nursery CompanyA. MILLER & SONS, Incorporators
MILTON, OREGON

GRAPE GROWERS *Attention*

Flame Tokay, Black Cornichon, Black Hamburg, Black Gros Colman, Black Muscat, Muscat, Rose of Peru, Black Ferrara and other fresh, healthy cuttings for delivery this winter.

*Prices (reasonable) on application
Order early*

A. J. Galloway Healdsburg, Cal.

Choice Fruit Land

Yakima and Benton Counties
Washington

AT WHOLESALE
(Price of wheat lands)

Yakima Realty and Investment Co.

12 East Yakima Ave., North Yakima, Wash.
805 Third Ave., Seattle, Wash.
317-819 Palace Bldg., Minneapolis, Minn.

ADVOCATES CALIFORNIA BOX.—Mr. W. I. Newcomb, of Sebastopol, California, writes in regard to the controversy over the Lafean bill as follows: Through the columns of "Better Fruit" I note that the growers of the Northwest want the Lafean bill amended so as to make the box at present used in the Northwest the standard apple box, instead of that advocated in the bill. It seems to be the general sentiment here that the Oregon box would be as good a standard as could be secured. This sentiment, however, probably emanates from the fact that the Oregon box is two inches shorter than the one used here and consequently holds sixteen apples less. There is one thing in favor of the California box that has heretofore been generally overlooked, and that is its adaptability for steamer shipment, owing to the fact that it is just twice as long as wide. The majority of our markets require water transportation, Australia being one of, if not the best, market we have, and especially is this true of our Gravensteins. In conversation with Mr. Patrick Duffy, who handles practically all our Australian shipments, I was informed that twenty-two of the boxes we use could be put in the same space that eighteen of the Oregon boxes occupy. Mr. Duffy also made this statement to a meeting of apple growers here. From this you will readily see that this matter of steamer loading facility is important and should certainly be considered in adopting a standard box. While we have no desire to force our style or size of box as standard, any more than we believe the growers of the Northwest have, we cannot get around the fact that the adoption as standard of the Oregon box, as advocated by the convention of representative growers at Spokane, would materially affect our "steamer" markets, as cost of transportation to these markets is a big item.

MILTON FRUIT GROWERS' UNION.—A meeting of the stockholders of Milton Fruit Growers' Union was held February 11 at Davis Hall, in Milton, Oregon. Election of directors for the ensuing year and reports of business for the past year were the primary object of the meeting, but many important matters were brought up. A resolution was adopted asking the county court of Umatilla County to pay the expenses of Deputy Fruit Inspector Campbell while attending a state meeting of inspectors to be held at Corvallis, Oregon. Representatives of two concerns manufacturing

orchard heating devices were present and gave the members many ideas of value. The work of the union being so thoroughly satisfactory, the business will continue to be conducted by the same officers. Business transacted last year amounted to more than \$112,000. Labor received nearly \$12,000, this item including about \$3,500 paid for packing apples and also covering cost of sorting and grading, these items being paid from each grower's account. It was stated that the business was con-

WRITE FOR FALL LIST—ISSUED OCTOBER 1st



THE SILVA-BERG-HOLDT COMPANY
184 Orchard Street Newcastle, Cal.

PORTLAND WHOLESALE NURSERY COMPANY

Rooms 1 and 2 Lambert-Sargeant Building
Corner East Alder Street and Grand Avenue
PORTLAND, OREGON

RICHLAND NURSERY

Richland, Washington
FRUIT TREES

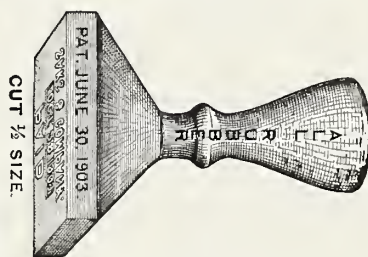
Complete stock of leading varieties of
Apples, Pears, etc.

WRITE US FOR PRICE LIST



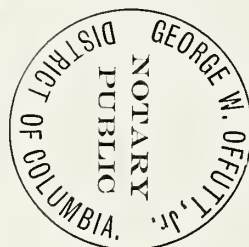
with any wording.

\$1.50

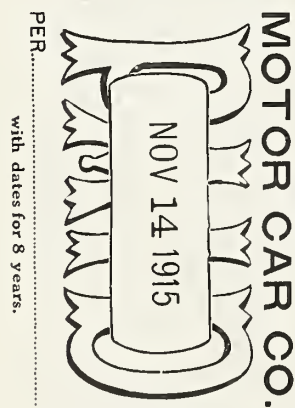


CUT 1/2 SIZE.

with any wording



\$1.25



PER... with dates for 8 years.

\$2.00

with dates for 8 years



\$1.50

ALL RUBBER STAMPS

These Stamps are especially adapted to rapid work and will stand any amount of hard usage, and produce uniformly perfect prints.

SEND FOR CATALOGUE

LAMB & TILDEN,

Washington, D. C.

The Oregon Nursery Company

ORENCO, OREGON

Wishes to thank the hundreds of readers of "Better Fruit" for their liberal patronage the season just closed.

Our plantings for fall of '10 and spring of '11 are larger than ever, and with our increased facilities can assure your future orders the very closest and painstaking attention.

CATALOGUE SENT FREE

ducted upon five per cent of the receipts. Growers placed their orders with the manager, Mr. Lamb, for the season's supply of spray materials. The union is in good condition financially. Besides its property it has on hand approximately \$2,000 worth of material. Many members and others signed contracts for the handling of the coming crop, which promises to reach the quarter of a million mark this year. The greatest harmony and good feeling exists, which augers well for the success of co-operative marketing in the Milton district.

◆ ◆ ◆

THE PROPOSAL to hold in Vancouver in November the first Canadian National Apple Show was warmly endorsed at a meeting held in the office of the Tourist Association in Vancouver, British Columbia. A provisional committee of representative citizens was appointed, which will request the mayor to call a public meeting with the object of forming a permanent association. The success attending apple shows in the United States, particularly that held in Spokane, as also the interest manifested by various public bodies in British Columbia in the proposal to establish a like exhibition in Vancouver, was pointed out by Maxwell Smith. Not only had the newspapers of the province endorsed it, but favorable resolutions had been adopted by all the agricultural bodies interested in fruit culture at their annual meetings. Mr. Smith added that he had personal assurances of support from all the members of the legislature whom he had interviewed. The following provisional committee was appointed: The mayor, Sir C. H. Tupper, K. C. and Messrs. H. A. Stone, president of the Board of Trade; F. J. Procter, president of the Tourist Association; J. J. Miller, president of the Exhibition Association; E. A. Buchan, acting president of the Canadian Club; S. W. Thompson, president of the Trades and Labor Council; Campbell Sweeney, chairman of the Clearing House Association; W. M. McKay, president of the Conservative Association; J. H.

Senkler, K. C., president of the Liberal Association; R. H. H. Alexander, C. S. Douglas, B. F. Dickens, J. N. Ellis, Maxwell Smith and Elliott S. Rowe.

◆ ◆ ◆

SPEAKING in Portland the other evening, Director Shepard, of the Hood River Apple Growers' Union, offered excellent advice to the people interested in growing and handling the apple crop of the Pacific Northwest, says the Oregonian. The most important point brought out in his address was that in which he accused retailers of injuring the demand for apples by charging exorbitant prices. Mr. Shepard stated that a box of apples, for which the grower received about \$2.25, reached the hands of the retailer via the association and the commission merchant at a cost of approximately \$3. For these apples the retailer is then accused of exacting prices which in some cases bring a profit of 500 per cent. There is, of course, a limited number of consumers who will pay very high prices for first-class fruit. Unfortunately for the fruit industry, this class of buyers is not large enough to supply a demand for more than a moderate amount of fruit. The apple is a delicious fruit, and if it can reach the consumer at a moderate cost there are immense possibilities for widening the market. It is still, however, far from being a necessity, especially so long as the best stock remains beyond the financial reach of people of poor or only moderate circumstances. With the rapidly increasing acreage of apple orchards, this objection to present methods of marketing will be overcome by its own weight. Even the grower may be obliged to take less than \$2.25 per box, and the profits and general good of the industry to the country may be enhanced by the greatly increased demand made possible by reasonable prices. It is a commercial law as old as trade itself that high prices restrict and low prices increase consumption. Apples are not exempt, not even Hood River apples.

HOOD RIVER STRAWBERRY PLANTS

The genuine Hood River plants, Clark seedling. Grown and propagated in Hood River. The quality is the best, grown from thrifty mother plants on virgin soil. The Hood River berry is the greatest shipping berry grown in the world and brings the highest price of any variety grown in the Northwest. I still have a fair quantity on hand, but if the demand keeps up I will soon be all sold out, so order early if you want plants to set in April or May. My prices are reasonable; 100 plants, \$1.25; 1,000 plants, \$5; 5,000 to 10,000 plants at \$3 per thousand. I will quote special prices on larger quantities. Plants set this spring will bear a good crop next year. Address E. L. KLEMMER, Hood River, Oregon.

To large planters and dealers:

Contract

YOUR

Fruit Trees

NOW FOR NEXT YEAR

We will deliver according to specifications. Let us prove to you that we can.

Northwest Nursery Company

P. O. Box QQ
North Yakima, Washington

Nurseries:
Mabton and North Yakima

WHAT ARE YOU GOING TO PLANT? Tokays, Cornichon, Muscat or Malagas

We have them, strong, well-grown one-year vines, finest in the land

How do BARTLETTS strike you this season? Plenty of them, stock cannot be beaten, and prices right. Then how's SPITZENBERG, YELLOW NEWTOWN PIPPIN and YELLOW BELLEFLEUR?

One nurseryman visiting our Nursery said, "Gentlemen, you should be proud of this stock." And we are. So will you be when you plant it.

What about CHERRIES? BING, LAMBERT, BLACK TARTARIAN, ROYAL ANNE and CHAPMAN. It would not be hard to sell you these, could you see them.

PEACHES, stocky, well grown, and, say, they have the roots, plenty of them, and not cut off at top of ground.

Another thing: Our prices are RIGHT, we dig our stock RIGHT, handle it RIGHT, treat you RIGHT, and it is sure RIGHT in every way. Write us and we will tell you all about it. Better still, come and see us and we will show you.

CHICO NURSERY CO.

Chico, California

Surplus Seedlings in Cold Storage at Portland, Oregon

Apple Seedlings in the following grades, No. 1, 2, and 3

Japan Pear Seedlings, No. 1

Wire or write for prices, giving amounts wanted

SHENANDOAH NURSERIES

D. S. LAKE, Proprietor

Shenandoah, Iowa

SURPLUS TREES

50,000 Peach

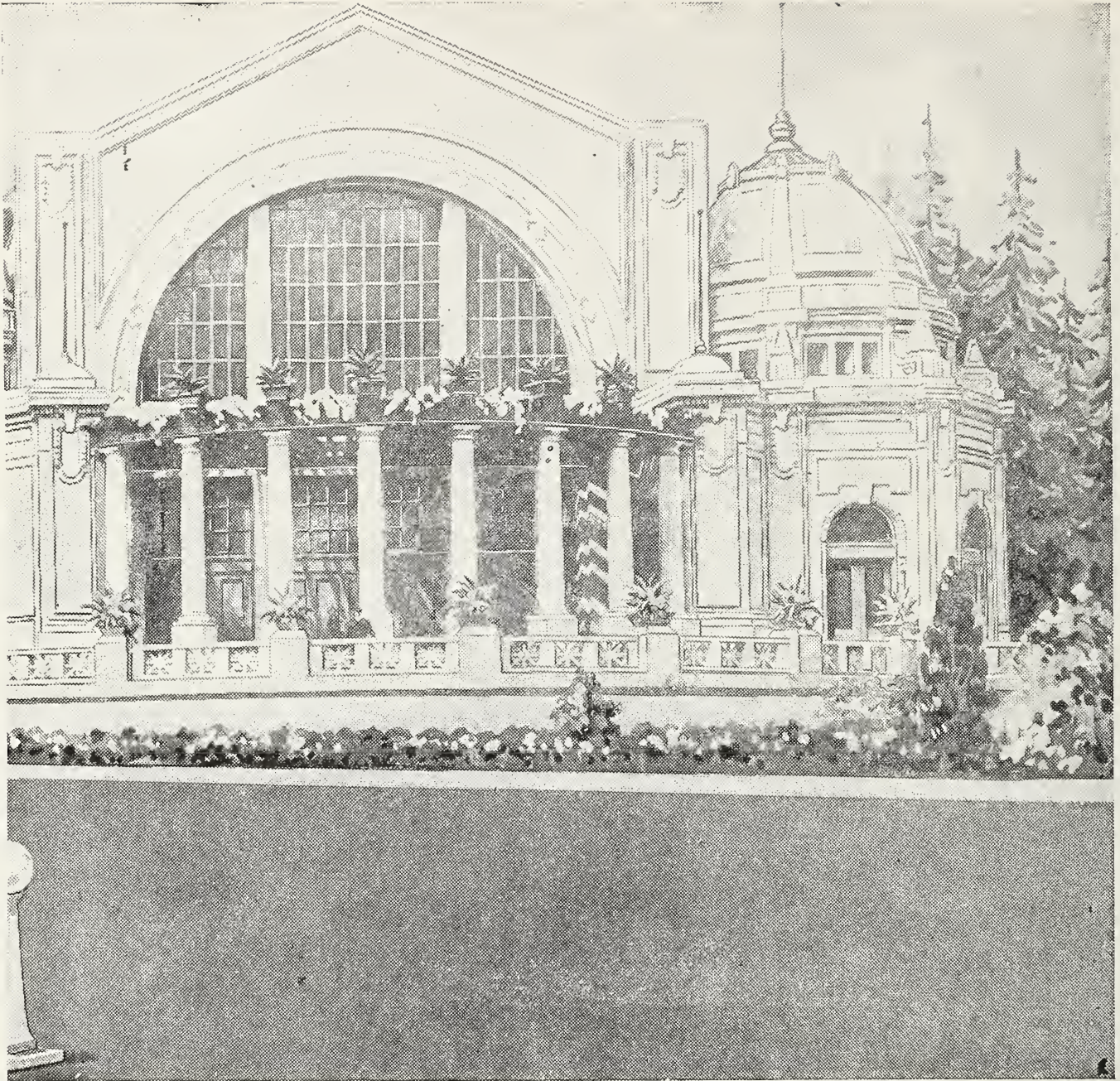
4,000 Comice Pear

10,000 Winter Nellis Pear

WAPATO NURSERY

TIM KELLY, Proprietor

WAPATO, WASHINGTON



LILLY'S BEST Seeds and Good Care Made the Beautiful A. Y. P. Lawns

The secret of all successful farming is seed selection. Every experiment station in the country is not only impressing this important fact upon you, but is trying to suppress seed adulteration by law. Don't buy cheap, inferior seed, for good seed is worth good money. Buy from a reputable house, whose very existence depends upon your success. For over twenty years Lilly's seeds have been sold on the Pacific Coast. Lilly's seeds are pedigreed seeds, tested seeds, true to name, gold medal winners, acclimated and best for the West. Why experiment when good care and Lilly's seeds mean banner crops and successful farming?

LILLY'S BEST FERTILIZERS

If you take away you must give back. This is the inviolate law of nature. Every time you harvest a crop you take something from the soil that grew it, hence the necessity of commercial fertilizer. More commercial fertilizers have been used this year than ever before in the history of our business. We have become an authority on fertilizers, and in fact deserve this recognition because of the care and study we have given this subject. You simply can't go wrong if you use Lilly's fertilizer, because the mixtures are complete fertilizers for the purposes wanted. The tag on every sack bears the Lilly trade-mark, giving a guaranteed analysis of the contents, and this analysis complies liberally with every state law.

SEND FOR OUR CROP BOOK—A complete and scientific work compiled by experts, as to when, how, and with what to fertilize.

LILLY'S BEST POULTRY FOODS

Received several gold medals at the A.-Y.-P. Exposition for their excellent quality and superiority over all others. From all parts of the Pacific Coast we received letters of unsolicited praise from poultrymen who use them.

The following are manufactured under the Lilly's Best Brand: Lilly's Best Chick Feed, Lilly's Best Common Sense Egg Food, Lilly's Best

Scratch Food, Lilly's Best Poultry Tonic, Lilly's Best Insect Powder, Lilly's Best Lice Killer (liquid), Lilly's Best Blood Meal, Lilly's Best Granulated Bone, Lilly's Best Crystal Grit, Lilly's Best Granulated Shells, Lilly's Best Alfalfa Meal, Lilly's Best Roup Cure, Lilly's Best Cholera Cure, Lilly's Best Poultry Pepper, Lilly's Best Charcoal. Every one of the above are sold by dealers. Avoid imitations and the "just as good" kind. Send for Poultry Book, not merely a catalog, but a book of valuable information regarding the raising and care of poultry.

DON'T FAIL TO SEND FOR CATALOGS

Our Annual Seed Catalog for 1910, our Poultry Book, our Bee Supply Book, our Spray Book, our Crop Book are not merely price lists, but the most useful and complete works of their kind possible to obtain. They are the condensed experiences of over twenty-five years of supplying the needs of the farmer, horticulturist and poultryman on the Pacific Coast. Shall we mail you a copy today? If so write.

The Chas. H. Lilly Co., Seattle

For over a Decade the Leading Seedsmen of the Pacific Coast

LILLY'S BEST BEE SUPPLIES

Are standard, in fact, are the best to be had for money-making purposes. We are agents for the celebrated Lewis Bee Ware, which gives universal satisfaction. I. Asbeck, the biggest bee man in California, writes us: "I am very much pleased with the stock you keep. Please send me your late bee catalog, as I have about 450 colonies to require."

SEND FOR FREE CATALOG. We will mail this complete 82-page book, illustrated, free to any one on request. It contains not only valuable information for the experienced bee man, but contains many helpful suggestions for the beginner.

LILLY'S BEST SPRAYS

Lilly's Best Lime and Sulphur Solution and Eagle Arsenate of Lead are recommended by the state experiment stations and are made only from the finest ingredients.

SEND FOR SPRAY BOOK, the most complete edition of its kind ever published on the Pacific Coast. It contains a spray calendar, with illustrations, description and habits of insects and diseases peculiar to plants of the Pacific Coast; also spray machinery, sprays and how to use them.

WE CARRY A FULL LINE OF SPRAYING MACHINERY, from the smallest nozzle to the most powerful two-horse traction sprayer.

TO MAKE frost-fighting effective cold air must not be allowed to settle. Heaters are rarely needed in a wind, as the wind keeps the frost from settling. Thirty-two degrees above zero is the general signal for starting fires, but much depends on the time of the night that it gets cold, and also the condition of the fruit buds and the kind of fruit to be saved. This is an interesting study and no definite information can be given except that if the temperature is kept above thirty-two degrees a full crop of fruit will be insured against frost. Nobody should light fires until they are needed. When they are needed, light every other one at first, and as it gets colder light more fires. Ordinarily twenty-five coal fires, where the Ideal is used, will save the crop. Our oil friends will try to make you believe oil will produce a quicker heat than a kindling and coal fire. This is absolutely false; read Professor Whipple's reports. It is silly to say that oil is less expensive than coal. It is three times as expensive when oil costs five cents per gallon and coal costs three dollars per ton. Ordinarily one man can take care of 400 Ideals, but during an exceptionally long firing he should have an extra man to help. Heaters are placed between the trees in the rows. This permits of a team with wagon or sled being driven through to refill without interfering with the heaters. It also allows cultivating and other work to be done in the orchard while the heaters are still needed. Ideal heaters are undoubtedly the best heaters yet designed to save vegetables and strawberries, as well as tree fruits. The reason is found in the conical shape of the firepot

and the fact that openings are formed through the coal by a self-cleaning process, causing a strong downward and outward radiation of heat. Ideal heaters will not be kept in stock like sugar, soap, boots and buckshot, as it takes thousands of dollars to do a business like they did last year and are now doing this year. While the factory has a capacity of 20,000 to 30,000 Ideals daily, it is essential that you place your order as soon as possible, as they will be very rushed at the last.

IT IS ESSENTIAL that all work connected with orchard heating be systematized as far as possible. First, buy a bale of waste, and always have plenty on hand. Buy a barrel of crude oil or smudge oil; knock out the head, and after tearing waste apart put it in the barrel of oil. When thoroughly saturated run waste through an old wringer, and it is ready for use. Don't leave oil in barrel during summer; it will leak out. Second, have kindling sawed in six-inch lengths; it is then an easy task to split it rapidly with a hatchet. Split to size of fingers. One man can prepare

enough in one day for 1,000 fires. Third, use nut or small lump coal; handle with coal fork having close set tines. This will separate slack, which is expensive to burn. Place waste, kindling, coal and heaters on a low truck wagon, and have man stay in wagon to fill heaters. Have brackets on side of wagon to hold heaters. To load, place a small piece of waste on side of heater near bottom, throw in loosely a handful of kindling, put in the coal, using care to keep center of coal open, which will cause a quick draft when starting. Fill every other heater with full charge of coal, which will bring coal above edge of heater. The large cover protects kindling, and by placing a lump of coal on cover the wind will not blow it off. Leave every other heater lightly loaded for short firings, which is usually all required. Place heaters between the trees in the rows; this permits driving through to refill and do other work. Have edges of orchard reinforced with heaters, leaving fewer in proportion in center of orchard, as the pressure of the cold air on the outside forces the warm air toward the center of orchard. If work is systematized and material properly prepared, two men



HIGHEST QUALITY

SEEDS, BULBS, PALMS, TREES, SPRAYS AND SPRAY PUMPS, GARDEN SUPPLIES, Etc., Etc.

We are Catering to the Best Class of Buyers. Our Motto—Quality First, Price as Low as We Can Make It.

DESCRIPTIVE CATALOG FREE

ROUTLEDGE SEED AND FLORAL CO.

169 SECOND STREET,
Between Morrison and Yamhill Streets,
Portland, Oregon.

SEEDS

FIELD—GARDEN—FLOWER

Experience and a thorough knowledge of our business and the markets of the world, enable us to furnish the very best seeds, plants and supplies obtainable. It has taken many years to establish this relation with the producers and best growers, but only in this way is it possible to obtain the finest, true stocks at no greater cost to our customers than the ordinary kinds.

FREE: OUR BEAUTIFUL NEW CATALOG
No. 200

Write today. We send postpaid.
Look for our Diamond trade-mark. It means
Real Quality—the best obtainable

DIAMOND PORTLAND SEED Co.
QUALITY

“Diamond Quality” House
Portland, Oregon 25

SEED Catalog NOW READY

We want every Farmer, Gardener, Poultryman and Stockman to have a copy of our new Seed Book. It contains 120 pages of everything needed to make a success of farming in the West. In this respect Lilly's Seed Book is better and more authentic than other publications of this nature. It is the experience of over twenty-five years of honest seed selling in the West.

Lilly's Seeds are Best for the West and are sold by your dealer. Send today for new catalog.

THE CHAS. H. LILLY CO.
SEATTLE PORTLAND

Seeds

THE KIND YOU CAN'T KEEP IN THE GROUND
They grow, and are true to name.
Write for prices on your wants.

188 Front Street **J. J. BUTZER** Portland, Oregon
Poultry Supplies, Spray, Spray Materials, Fruit Trees, Etc.

Burpee's Seeds that Grow

140 VARIETIES ANY QUANTITY
Plenty of stock in our 40,000 pounds

Growing Plants as Season Requires
All Makes High Grade
Pruning Tools
Garden Tools
Hose and Spray Nozzles
International Stock and Poultry Food
International Remedies
Incubators and Brooders
Everything for Building
Everything for Furnishing

Stewart Hardware & Furniture Co.
22,000 feet floor space Hood River, Oregon

Apple Seedlings

We have some surplus, both American and French grown
All grades for grafting and budding

Imported Fruit Tree Stocks

Now arriving—Cherry, Pear and Plum stocks—All grades

APPLE GRAFTS

Piece and Whole Root Order quickly
Also a complete line of general nursery stock, mostly in storage

SEND LIST FOR PRICES

WANTED—APPLE SCIONS

Shenandoah Nurseries

D. S. LAKE, Proprietor SHENANDOAH, IOWA

IF YOU WANT TO KNOW ABOUT

OREGON

SUBSCRIBE FOR

The Chamber of Commerce Bulletin*A Monthly Commercial Publication of Merit*

Official organ of the Portland Chamber of Commerce, the leading and most influential commercial body in the Pacific Northwest

SUBSCRIBE NOW, \$1.00 PER YEAR

ADDRESS

The Chamber of Commerce BulletinDAVID N. MOESSOHN, *Publisher*Suite 616, Chamber of Commerce Building
Portland, Oregon

can handle a ten-acre orchard. Place heaters in orchard when buds begin to open and leave until several days after date of last killing frost. Have tested thermometers at different places in the orchard and one or two outside to aid you in regulating fires. All thermometers should be watched closely, as a few degrees below the frost line makes a mighty lot of difference. Don't get excited or curious to light up before the danger point is reached. If you have Ideals in your orchard and have followed directions for loading, every fire will burn and you will have heat just as soon as it is possible to get it with any heater. Thirty degrees above zero is usual signal for starting fires. If it is midnight or before that it gets cold enough to fire, light the heaters with full charge first. If it is after midnight, light heaters partially filled. Use asbestos torch; a boy can light an acre in five minutes.



THERE is seldom a season when peaches or apples are not injured from spring frosts. The Missouri Agricultural Experiment Station has proven that this freezing can be prevented by heating the orchard by means of crude oil burned in pots made for the purpose. The orchard heaters cost about \$15 per hundred and the oil about

five cents a gallon or less. The frosts usually come during the latter part of the night in late April or early May, and half a gallon of oil per pot, which would burn two hours, would generally be sufficient to save the crop for one night. By using from seventy-five to one hundred of the oil pots per acre the temperature of the orchard may be raised from two to six degrees. It is best to place one pot beneath each tree, although for peaches so many fires would not be necessary. The cost of heating per acre would be as follows: One hundred pots, \$15; fifty gallons of oil, \$2.50; labor, 50 cents; total, \$18. Usually it will be necessary to light the fires for at least two nights during the year, which would add \$2.75 more to the above total, making the cost for the first year \$20.75 per acre. The pots should last for five or ten years, so that after the first season the cost should not exceed \$5 or \$6 per acre per year. Of course, if a man does his own work, these amounts will be reduced. The pots should be filled with oil and distributed in the orchard well in advance of the time when they will be needed. Thrust a wisp of dry grass into each vessel of oil, allowing it to hang over the side. The pots are fired by applying a torch to the grass. The oil should not be lighted until the temperature gets down to the danger point. For peaches the danger points are

National Irrigation Journal

GOLDEN OPPORTUNITIES IN THE GOLDEN WEST

Edited by Clyde A. Morrison.

The leading publication of its kind in the world for the investor, home-seeker, farmer, irrigation companies and agents. Covers the entire subject. Printed on the best grade of paper, with highly embellished cover printed in gold and colors, and a three-color process picture every month illustrative of successful irrigation. Special articles by authorities on irrigation.

Published Monthly. One Dollar a Year

NATIONAL IRRIGATION JOURNAL

First National Bank Building, Chicago

The Colorado Fruit Grower

\$1.00 the Year

If you were locating a gold mine would you look for mineral in a rocky formation or in a sandy desert?

If you were seeking information on how to work irrigated soil would you get the advice from an expert on soil in a rain belt or from an expert in an irrigated region?

The Colorado Fruit Grower aims to cover that section of arid land lying between the Missouri River on the east and the Sierra Nevada and Cascade Ranges on the west, commonly known as the Great Salt Basin.

It is to be supposed that we know how to irrigate arid soil, having made a lifelong study of such conditions, and you may readily see that the timely instructions printed in the Colorado Fruit Grower are especially adapted to dry climates and dry soils.

Every orchardist in this region, and every person owning fruit land in this Great Salt Basin, needs such a magazine as the Colorado Fruit Grower.

The best, the biggest and the easiest way to conduct an irrigated farm is to use the columns of the Colorado Fruit Grower, for latest ideas and suggestions, all for \$1.00 the year.

Sample copies free on application. Address

COLORADO FRUIT GROWER

GRAND JUNCTION, COLORADO

as follows for the different stages of development of the buds: Buds appreciably swollen, zero; buds showing pink, 15 above zero; buds almost open, 25 above zero; flowers newly opened, 26 above zero; petals beginning to fall, 28 above zero; petals off, 30 above zero; shucks (calyx tubes) beginning to fall off of the young peaches, 32 degrees is the danger point. The above figures would apply fairly well for apple buds and blossoms at similar stages. A pamphlet treating the

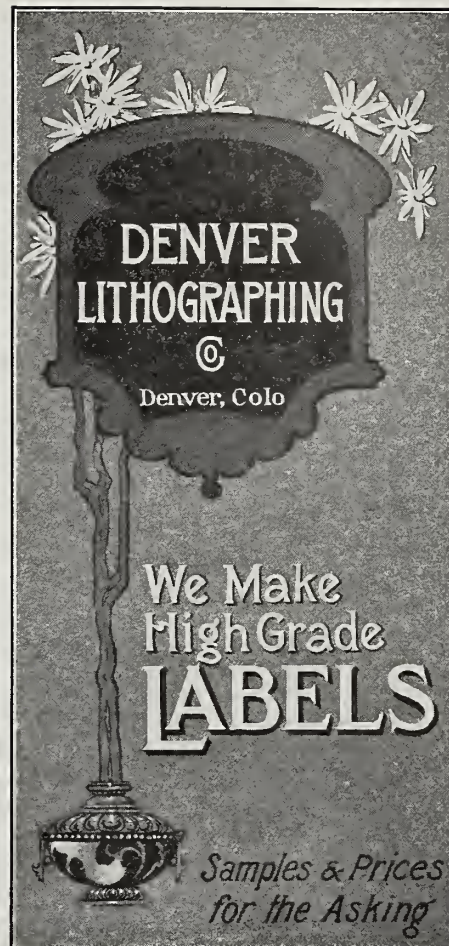
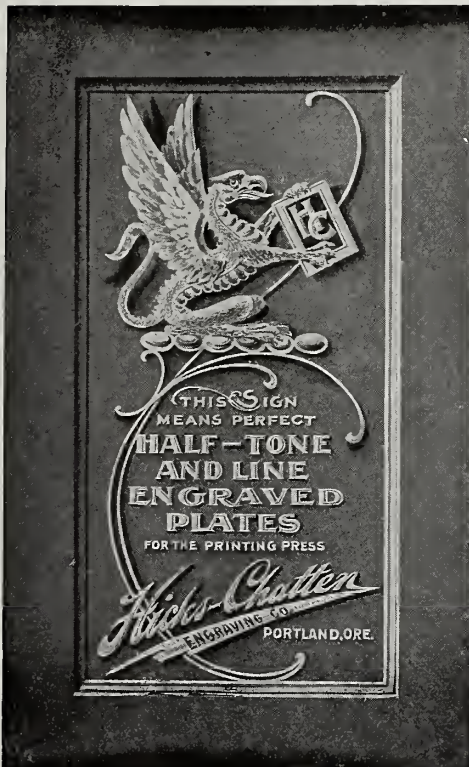
above subject in full will soon be published and may be had free upon application to W. L. Howard, secretary State Board of Horticulture, Columbia, Missouri.



SOIL CULTIVATION.—The general object of all soil cultivation is to make favorable conditions for the growth of desirable plants. In relation to the soil, proper conditions of moisture, heat and air must be present. We cultivate the soil for the following purposes: (a) To open up the soil: Plant roots must be able to push their way through the soil and get food from a large area for the best development. (b) To conserve moisture: This is possibly the most important effect of cultivation in Montana. Soil moisture, of use in plant growth, exists around the soil particles and moves from the wet to the dry place. To prevent unnecessary evaporation and loss we must cultivate as early as possible in the spring, as soon as possible after rain, immediately behind the plow in spring plowing, and as soon as the soil is dry enough after irrigation. (c) To raise the soil temperature: The warmer the soil at planting time in the spring, the more rapid the germination and growth. By stopping evaporation early spring cultivation raises the soil temperature. To admit air: Plant roots and soil organisms require air for best development and activity. To destroy weeds: Weeds are soil robbers. Cultivate them out when they are small and thus prevent their seeding.



LET ME give you a word of caution. All land is not fruit land. Poor trees on good fruit land will not make orchards. Good trees on good fruit land will not succeed without proper care. All climatic conditions are not suitable for the productions of fruit, the Oregonian reports E. H. Shepard of Hood River as saying in an address recently in Portland. "How many are of the opinion," said Mr. Shepard, "that the entire Northwest will some day be one great fruit district? Remember, if you think of investing, of the words of caution I have given you. If you buy of a company be doubly careful. First, make sure that the land is situated in a good fruit country. Be sure the company is responsible financially and morally, and assure yourself they will carry out contracts. If you are to set the orchard yourself, be sure you get good land. Above all, do not plant varieties because they have done well in some other district, or because they bring the highest price, but select those varieties that you are sure will do the best in your locality and will sell for the most money."



Increase Your Profits!

By
Using

FANCY LABELS

on Your
Fruit

WE MAKE ALL KINDS OF LABELS, FOLDING BOXES, STATIONERY ETC. FOR THE FRUIT GROWER, SHIPPER AND CANNER.

Write us for Samples and Prices

Schmidt Lithograph Co.

408 WELLS FARGO BLDG.

PORTLAND, OREGON.

A Trip to the Coast

Is incomplete without a ride
on the

Mt. Hood Railroad

By Mountain Streams, Virgin For-
ests, Apple Orchards and Snow
Capped Peaks

Connects with O. R. & N.
at Hood River, Oregon

CAPITAL STOCK \$100,000 SURPLUS \$20,000

FIRST NATIONAL BANK

HOOD RIVER, OREGON

F. S. STANLEY, *President*
J. W. HINRICKS, *Vice President*
E. O. BLANCHARD, *Cashier*
V. C. BROCK, *Assistant Cashier*

ESPECIAL ATTENTION AND CARE
GIVEN TO BUSINESS DEALS
FOR NON-RESIDENT CUSTOMERS

Assets over \$500,000

Savings Bank in connection

APPLE PACKING SUGGESTED AS COURSE IN SCHOOLS

THE FARMERS' INSTITUTE at Fruita, Colo-
rado, January 18, convened in the auditorium
of the Methodist church, with an attendance that
completely filled the building. The high school
students attended in a body to take notes on the
addresses.

Professor Bennett of the Experimental College
of Fort Collins opened the morning session with
an address on "Orchard Setting and Planting."
One of the principal thoughts brought out that
will be of help to the farmers was that orchards
should be set out on prepared land instead of raw,
for the land lacks humus. In speaking of the
stock of the orchard he suggested one variety of
trees, and top-work the trees. But instead of
making the heading close together the first year,
make it far apart, so that in the course of ten
years or such a matter the branches will not be in
a mass, and thereby avoiding the small apples,
as such injure our production. One remark Pro-
fessor Bennett made that will be appreciated by
the farmers was in regard to the way the trees
should be left for the winter. He stated that if
the farmers would stop watering in July and let
them alone till after the picking season; then

water them and let the freeze come upon them
while the soil is in a slushed condition, there
would be fewer trees winter-killed. Owing to the
fact that Professor Bennett was at one time a
nurseryman, his remarks will be of much worth.

This address was followed by an address by Mr.
C. R. Greisen of Hood River, Oregon. He is also
a representative of "Better Fruit," one of the best
fruit papers in the United States. Mr. Greisen
gave a full description of the picking and packing
methods at Hood River. A few would be of much
profit to the farmers if followed out here. He
stated that the Hood River apples were the only
ones in America that are sent to English ports
without port inspection. They have a fruit union
that looks after the interests of the growers. He
said that much fruit is spoiled in the picking.
One thing they have at Hood River that would
greatly improve our packing system is an apple
packing school connected with the public schools,
where picking and packing is taught. The packers
are sent out by the union, and in packing they
wear cotton gloves, so as to wipe the apples off as
they are put into the boxes. Their apples are all
wrapped, and instead of being put in tiers they

LADD & TILTON BANK

Established 1859

Oldest bank on the Pacific Coast

PORTLAND, OREGON

Capital fully paid	\$1,000,000
Surplus and undivided profits	\$600,000

W. M. Ladd, <i>President</i>	<i>Officers:</i>	R. S. Howard, Jr., <i>Assistant Cashier</i>
Edward Cockingham, <i>Vice President</i>		J. W. Ladd, <i>Assistant Cashier</i>
W. H. Duncleley, <i>Cashier</i>		Walter M. Cook, <i>Assistant Cashier</i>

INTEREST PAID ON TIME DEPOSITS AND SAVINGS ACCOUNTS

Accounts of banks, firms, corporations and individuals solicited. Travelers'
checks for sale, and drafts issued available in all countries of Europe.

LESLIE BUTLER, *President*
F. McKERCHER, *Vice President*
TRUMAN BUTLER, *Cashier*

Established 1900
Incorporated 1905

Butler Banking Company

HOOD RIVER, OREGON

Capital Fully Paid, \$50,000 Surplus and Profits are \$30,000

INTEREST PAID ON TIME DEPOSITS

We Give Special Attention to Good Farm Loans

If you have money to loan we will find you good real estate security, or if
you want to borrow we can place your application in good hands, and we
make no charge for this service.

THE OLDEST BANK IN HOOD RIVER VALLEY

Send us your
White Salmon Valley Business

White Salmon Valley Bank

Under state examination

White Salmon, Washington

NEW RESIDENTS

We are always pleased to extend courteous assistance to new residents of Hood River and the
Hood River Valley by advising them regarding any local conditions within our knowledge, and we
afford every convenience for the transaction of their financial matters. New accounts are respect-
fully and cordially invited, and we guarantee satisfaction. Savings department in connection.

HOOD RIVER BANKING AND TRUST COMPANY

HOOD RIVER, OREGON

J. M. Schmeltzer, *Secretary*
Hood River Abstract Company
Hood River, Oregon
**ABSTRACTS INSURANCE
CONVEYANCING**

**ABSTRACTS, LOANS,
INSURANCE, CONVEYANCING**
WAUCOMA ABSTRACT AND
INVESTMENT COMPANY
(Incorporated) Hood River, Oregon

Cupid Flour

Has same standing in the Flour trade that Hood River Apples have in the Fruit trade.

MADE BY

**HOOD RIVER
MILLING CO.**

S. E. Bartmess

UNDERTAKER AND
LICENSED EMBALMER

For Oregon and Washington

Furniture, Rugs, Carpets
and Building Material

Hood River, Oregon

C. M. SHAW

ROY F. DEAN

Dean & Shaw

Electrical Supplies and Fixtures
Scientific Electrical Construction

Home Phone 3 Hood River, Oregon

The PARIS FAIR

Hood River's Largest and Best Store

**DRY GOODS
SHOES, CLOTHING**

We are offering some extra
specials in our Clothing De-
partment. Ask to see them

Try a pair of American Lady
\$3 and \$3.50 Shoes, or Ameri-
can Gentleman \$3.50 and \$4

SLOCOM'S BOOK STORE

Office Supplies
Stationery

Ledgers, Journals, Time Books
Memorandum Books
Rubber Stamps

Souvenir Postals Picture Frames

are of uniform size and packed in layers with a paper between each.

A lively interest was shown in the morning and discussions followed each address, and all were allowed to ask questions that came to mind.

Following this was an address by Professor Gillett of Fort Collins on "Spraying Apples." He spoke of the advancement attained by the valley in the course of three years in raising apples. He spoke principally on the codling moth, which is one of the most disastrous insects and the one most met with in our valley. His description of the moth was shown by illustrations. It is necessary, he said, to begin spraying the trees just when the blossoms begin to fall. This is the most important of the three sprayings of the year. The next spraying should be applied one month later, and the third and last spraying needed should be during the last of July. The address of Professor Gillett was highly spoken of as containing a vast amount of much needed information.

This address was followed by special music by the seventh grade. The chairman then introduced Mr. Paddock, one of our own local men. His talk was on "The Evil of Colorado's Packing." The main pack of Grand Valley is known as Colorado's "jumble pack." He advocated a uniform box throughout the West. He spoke of a new pack which would do away with the large apples and small apples in the same box. He also stated that paying the pickers by the piece injures the fruit, where if a uniform price per day was paid the pickers would not have to hurry so to make their wages. He encouraged the farmers to co-operate with the local fruit association in every way.

Professor Weldon of Grand Junction then discussed "The Scale Insect." The one most forcibly emphasized is that which sucks on the trees until they are useless. The scale is found at this time of the year, and can be detected by the reddening of the bark. He claimed that lime and sulphur is the best spray that can be used for it.

HOOD RIVER UNIVERSITY CLUB, most of whose members are apple growers, held a smoker in the Commercial Club rooms at Hood River Friday afternoon, February 25. The club issued invitations for an informal dance on that evening, and as many of the members would be in town the committee planned the afternoon session, at which discussion of horticultural subjects was in order. Pruning, spraying and the commercial side of fruit growing were taken up. Many well known Hood River growers were on the program, including E. H. Shepard, A. I. Mason, J. L. Carter and others. F. W. Cutler was chairman of the committee having the meeting in charge.

THE recently organized Umpqua Valley Fruit Association held its second public meeting at Myrtle Creek, Oregon, on January 22, says the Mail. The launching of this new project has met with most gratifying results. The aim and object of the association is to give publicity to the splendid natural advantages which the Umpqua Valley section of the country possesses for the raising of luscious fruits, and by a combined effort keep up a standard of excellence in raising, packing and marketing. In short, the slogan is, "For better fruit."



COLUMBIA RAMS

Make Arid Land Valuable

Cost about \$15.00 per acre of land
irrigated

COLUMBIA RAM CO.

Tenth and Johnson Streets

Portland, Oregon



CUT OF 1910 MODEL

Simplex Self Balancing Link Blade Cream Separators

HAVE YOU SEEN THE 1910 MODEL "SIMPLEX"

Note the solid, heavy frame and the convenient height of both the supply can and the crank.

This machine is the result of years of experimental work and has the best features of the 1909 Separator (the link blade skimming device, which has been tried and proved its worth, as is shown by numerous attempts to imitate, showing that other manufacturers appreciate the skimming qualities of the LINK BLADES, and the self-balancing bowl), together with the new low-down supply can and extra heavy base and the ease of running.

The self-balancing feature has been on the market for about two years and is a perfect success. It does away with the old style mechanically balanced bowl, which had to be sent to the factory to be rebalanced. The ease of running in this machine is not equaled.

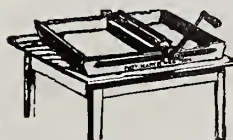
Note the large skimming capacities relative to prices.

No.	Capacity per Hour	Price
5	500 lbs.	\$ 75.00
7	700 lbs.	80.00
9	900 lbs.	90.00
11	1,100 lbs.	100.00

WRITE FOR CATALOGUE TO

MONROE & CRISELL

Everything for the Dairy, Creamery and Cheese Factory
145 FRONT STREET PORTLAND, OREGON





The Wisdom of Spraying Against the Codling Moth

Needs no argument from us. Western apples would not enjoy the fame they do today nor yield such handsome profits to the grower were it not for the intelligent spraying they receive. But in the choice of spraying materials there is opportunity for judicious selection.

We are not entomologists or fruit growers—neither do we make a hundred and one different compounds.

Arsenate of Lead

Hemingway's

produced in our own factory, which has been manufacturing arsenical poisons for thirty-two years, we specialize in. We know a great deal about Arsenate of Lead—how to make it to give the orchardist just what he wants—to give him the strength required by the official formulas, viz: Fifteen per cent arsenic oxide (As_2O_5).

This is the standard recommended by practically all state chemists and entomologists and is what the experienced fruit grower demands. A ten or twelve per cent article, in proportion to its lack of arsenic oxide, is that much cheaper to manufacture. Obviously, these weak products present no manufacturing difficulties and it would be to our advantage to supply them even at the corresponding reduction in price.

HEMINGWAY'S PURE ARSENATE OF LEAD is not only of correct analysis, containing, as we have said, fifteen per cent of arsenic oxide, but is in perfect mechanical and physical condition and mixes freely with water. We warrant it to be of the highest standard of manufacture.

Next in importance to quality is PRICE. Our unequaled facilities for purchasing or making the basic raw materials, together with modern equipment and adequate and economical transportation, enable us to quote prices which were previously unknown on the Coast.

In a word, we offer you ARSENATE OF LEAD, HEMINGWAY'S, fresh from the factory and of the very finest quality, in ideal condition for spraying purposes, of full analysis—printed in detail on the label every package bears—at a price based on the lowest cost of production and the smallest margin of profit.

Hemingway's London Purple Co., Ltd., New York

Write to our Coast Agents, who carry full stocks, for our attractive prices.

KERR, GIFFORD & CO., Portland, Oregon

C. Henry Smith, 24 California Street, San Francisco, California

SAGEBRUSH GRUBBING.—"Oh, yes," says the farmer, "your pictures of growing crops are all very nice, but how about the raw land with sagebrush on it? How long will it take me to get a crop in and begin to see some profit? I've got to get started quickly." That's a natural question. Here's an answer: By the newest method you can move onto your land this spring, get the sagebrush off, put in a crop without plowing and get returns the first year. Sagebrush or sagebush is not a true sage, such as our garden plant. This latter is a *Salvia* (as the botanists call it) and would not last long in dry districts. Sagebrush is an *Artemisia*, a near relative to mugwort, southernwood and the common wormwood. Like some of our "wet"

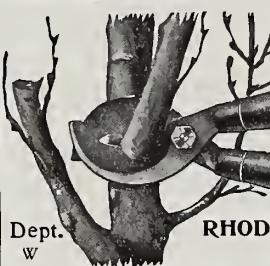
which four horses are hitched. Pole is supported by the all-steel framework and is adjustable up and down. Grubber is steel with crucible knives, keen and strong. In work the driver drops the knives with a lever until they slide along in the ground four or five inches beneath the surface. They cut off the brush at its weakest point and leave it ready for raking and burning. Grubber cuts a swath thirty inches wide. In practice one man can clear about four acres of three-foot sagebrush per day, at a cost of \$1.25 to \$1.75 per acre. This is three times as fast and one-third as cheap as it costs with bent rail or mattocks. Sow without plowing. This grubbing method brings a happy result. The grubber attachment gives the soil

such a thorough shaking up that it needs no further plowing. The cost of separate grubbing and plowing would be \$5 to \$7 per acre. Thus the saving is from \$3.75 to \$5.25 per acre.—From National Irrigation Journal.

◆ ◆ ◆

SPLENDID CLUBBING OFFER.—One of the best magazines published in the West, the *Sunset*, which tells all about Western life on the Pacific Coast and the Northwest, the possibilities and opportunities, not only in fruit growing, but in all other lines of business, and "Better Fruit," the best fruit growers' magazine published in the world, both for \$1.50.





RHODES DOUBLE CUT PRUNING SHEAR

Pat'd June 2, 1903.

RHODES MFG. CO.,
GRAND RAPIDS, MICH.

THE only pruner made that cuts from both sides of the limb and does not bruise the bark. Made in all styles and sizes. We pay Express charges on all orders. Write for circular and prices.

counties, sagebrush has an aversion to much "water." It grows very slowly. Some big samples at the National Irrigation Show in Chicago last December were likely 100 to 150 years old. So its root system is quite interesting to the new arrival in irrigation districts. A three-foot plant has a thick root stock extending down four or five inches. Branching out from this are a goodly number of small rootlets, which gather up the necessary moisture. If these rootlets are cut off at the right point the brush is easily removed. It never grows again. After water is turned on it dies. The new method of ridding land of sagebrush requires a machine having some sort of attachment with knives that slide along four to five inches beneath the surface and slash off the brush where the rootlets join the root stock. The half-toner cut shows such a machine—the 20th Century Grader—a grubber, leveler, ditcher, road grader, border thrower, lateral maker—all in one. The grubber attachment is fastened to the pole to

Colonial Strain Rhode Island Reds

SINGLE COMB

*The birds that lay all winter
The birds without superiors for the table
The birds that are beautiful to look upon*

My pens are made up of carefully selected pullets that have been laying all winter, of fine color and vigor. They are mated with richly colored, strong cockerels from the State of Rhode Island, the original home of the Reds. These cockerels are from trap-nested heavy-laying stock. My birds are kept under the Philo system. Orders now booked for March, April, May and June eggs. Settings of 15, \$3.00. February eggs all engaged. Young stock for sale in season.

WM. B. DYER, Breeder

"Canyon Crest" Ranch, Hood River, Oregon

Let us prove that a Binks Sprayer

will make the most money for you

Send your name now, on a postal or in a letter, to get all the facts about Binks Sprayers. You'll find just the one that meets your needs best—at a price that's easy on your pocketbook. Don't buy any sprayer till you hear from us. Read our book to know what's best. Read what others say—try a Binks—then decide for yourself.

The "Binks" combined engine and pump is the lightest, simplest and most compact water-cooled spraying outfit on the market today. The only gasoline power sprayer having an entirely all-brass pump. Nothing to rust or corrode from the spraying chemicals; brass ball valves; all-brass piping, and an eight-gallon steel air chamber. Nothing to get out of order—operates at 200 pounds pressure if required.

Our book illustrating many styles of sprayers will be sent upon request. Shows the sprayer for you.

The Binks Spraying Machine Co.

1909 Fulton Street

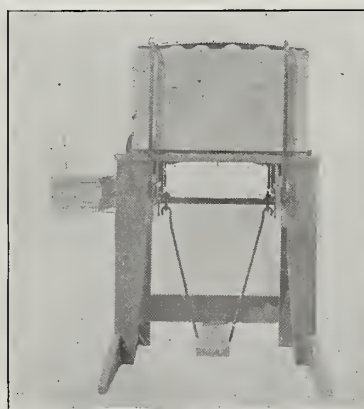
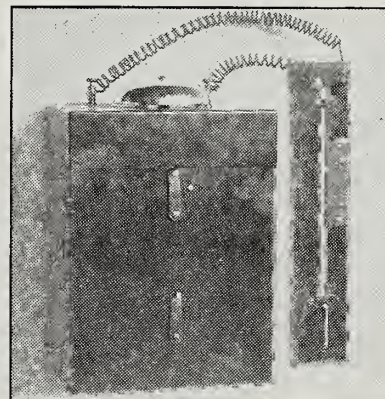
CHICAGO, ILLINOIS

THE

Cederborg Frost Alarm

Will wake you up in time. Order through your association or direct from

G. V. Cederborg
Denver, Colorado



W.L. Goyett

The lightest, fastest, most durable and easy to work automatic apple box press made. Will pay for itself in one season. The new machine has spring cleat holders. Shipping weight 35 lbs. Price, f.o.b. Canon City, cash with order, \$7.50.

W. L. GOYETT

801 South Twelfth St.
Canon City, Colorado.

We Are the Pioneers of Orchard Heating and Frost Alarms

Our system of orchard heating is absolutely the very best and cheapest on the market today; we assure absolute protection from frost and at the same time we keep your trees free from insects. The sulphuric acid gases produced by our orchard heater is death to all insects and pests.

*100,000 Heaters Sold in Oregon,
Washington and Idaho*

Our heaters work as a carbureter. They produce uniform heat. Raise temperature as high as 14 degrees.

We will guarantee our heaters to create more heat than any other heater on the market today, and at the same time a **UNIFORM HEAT**, which is necessary.

Order Now for Future Delivery

Frost Prevention Co.

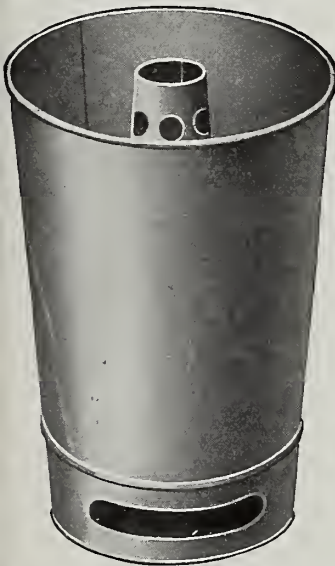
218 Haight Street

San Francisco, California

COMBINATION of fruit growers in order to sell their product for the best prices and avoid the big commission of the retailer, was urged by E. H. Shepard, of the Hood River Apple Growers' Union, in an address at the Y. M. C. A. in Portland, says the Telegram. It is his opinion that the exorbitant profits charged by retailers in the handling of apples is doing great damage by killing the market for apples and fruit, and also by lessening the legitimate profits of the fruit growers. "Taking everything into consideration," said Mr. Shepard, "including the money paid the farmer, the price paid the association and the commission merchant, the apples are sold to the retailer at approximately \$3 a box this last year, of which the farmer gets \$2.25. For such apples the retailer charges prices where the profits are sometimes as high as 500 per cent. Ten dollars a box is about what he receives on the average from the small sales in lots of a dozen or less. This is what hurts the apple business," he declared, and added that cheaper prices by the retailers will mean an immensely increased demand. He prophesied that the time will come when Oregon will have one great central association with numerous district affiliated associations, and even went so far as to declare that a time will come when the three states of Oregon, Washington and Idaho will be banded in a great central association. He also said in part: "The growing and marketing of apples is as distinctly different as manufacturing and selling, and in order to do either well requires special ability. As a rule the inventor, professional man, farmer or orchardist is not a business man. Growing fruit is an industry, selling fruit a business. These two departments should be divided, and men of ability selected to superintend each. There is but one solution: we must combine. We must pool our issues. We must form associations, and every grower must join and support it loyally."



THE INSTITUTE MEETINGS held by the experiment station men of Fort Collins, Colorado, during two weeks in January were the most enthusiastic ever held in that state. The amount of benefit to fruit growers of every district is inestimable. The attendance was large, showing that Colorado fruit growers were wide awake and in line for better fruit. A day's meeting was held in each of the towns of Fruita, Grand Junction, Clifton, DeBeque, Grand View, Rifle, Montrose, Olathe, Delta, Cedaredge, Hotchkiss and Paonia. We regret that space will not permit giving an account of each one of these institute meetings. The press is to be thanked for the splendid news items given out about these valuable meetings.



"Too busy fighting Jack Frost to write ads."

THE ROUND CREST ORCHARD HEATER CO.

Manufacturers of the Troutman Orchard Heater, Canon City, Colorado.

THE NEW WEST

Is full of surprises. It is no longer the land of cowboys, coyotes, blanket Indians. Instead of illimitable sagebrush desert, one finds fruit laden orchards, heavy headed grain, green meadows and alfalfa fields. It's the best of God's out-of-doors country—clear skies, pure air, snow clad mountains, waterfalls, odorous pine woods. Read all about it in The Pacific Monthly, magazine of the West. The Pacific Monthly Company, Portland, Oregon.

I am interested in the New West. Send three recent numbers of your magazine, for which I enclose 25 cents.

Name _____

BF Address _____

Land Plaster, the Great Soil Stimulator

Strengthens and invigorates all soils. You cannot afford to be without it.

OREGON LIME & PLASTER COMPANY

Mill: Lime, Baker County, Oregon Office: Worcester Building, Portland, Oregon

OLDEST LIVERY COMPANY
IN THE VALLEY

TRANSFER & LIVERY CO.

Special attention to commercial men, camping & fishing parties

TELEPHONE MAIN 131

HOOD RIVER, OREGON

THINGS WE ARE AGENTS FOR

KNOX HATS

ALFRED BENJAMIN & CO.'S CLOTHING

DR. JAEGER UNDERWEAR

DR. DEIMEL LINEN MESH UNDERWEAR

DENT'S and FOWNES' GLOVES

Buffum & Pendleton

311 Morrison St., Portland, Oregon

Cheap twine is not good economy

WE want every farmer in this country who uses our twines to go through the entire harvest season without one break in the field. We have set out to make that the standard test of all twines, and we believe that I H C twine comes nearer being such a grade than any other twine.

We have taken this matter the more seriously because we have stood back of the Sisal and Standard Sisal twines and the better grades of Manila ever since twine was made.

85 to 90 per cent of all the twine used is Sisal. It comes in a larger strand than the Manila twine; and, as all binders are adjusted to use this twine, the result has been that the bigger, stronger twine has proved more satisfactory in actual mechanical binding. Its only equal is the higher grade, higher priced Manila, which also bears the I H C trade-mark.

These two twines represent the highest point of excellence thus far attained in binder twine. You get the best when you ask your dealer for an

I H C Brand of Sisal—Standard Sisal—Manila or Pure Manila

You get a twine that has made its record in millions of wheat fields.

One that is guaranteed of standard length and standard strength.

One that is smooth-running; that works at a steady tension, without kinking or tangling in the twine box, and consequently without any loss.

One that has the smallest percentage of breaks and that works well in the binder knotters. Good binder twine is as important to you during harvest as good weather. You cannot regulate the weather, but you can pick your twine. If you want to be positive that you will have no twine delays, choose your twine—Sisal 500-ft.; Standard (which is made from pure Sisal) 500-ft.; Manila 600-ft., or Pure Manila 650-ft.—from any of the following I H C brands:

**Champion Deering McCormick
Milwaukee Osborne Plano International**

These brands mean time-insurance for you during harvest.

Let your local dealer know well in advance what your needs will be. The mills are working now. And if you want more interesting facts on binder twine, write nearest branch house for particulars.

**WESTERN BRANCH HOUSES: Denver, Col.; Helena, Mont.; Portland, Ore.
Spokane, Wash.; Salt Lake City, Utah; San Francisco, Cal.
INTERNATIONAL HARVESTER COMPANY OF AMERICA, CHICAGO, U. S. A.
(Incorporated)**



Malthoid Roofing

We want builders to see us about roofing. We want to demonstrate why it is to your advantage to roof your building with Malthoid Roofing—and we will do this to your complete satisfaction.

If you have roof troubles of any kind or of any description—no matter what kind of a roof you have on your building, see us at once and we will help you out of your difficulty.

Made by THE PARAFFINE PAINT COMPANY

San Francisco and Everywhere

Stuart Hardware and Furniture Co., Agents, Hood River

IT'S FREE

Send for it.
A new
and valuable
book on

Cheerful Homes

This booklet is illustrated with pictures of the most beautiful bungalows of Southern California

FRUIT BOXES

"Larch" Apple Boxes and
Strawberry Crates our specialty

BUILDING MATERIAL

We carry a complete line. Lumber, Shingles, Lath, Plaster, Cement, Lime, Sash and Doors, Brick, Roofing, Building Paper, etc.

We solicit your patronage

Bridal Veil Lumbering Co.
Hood River, Oregon

W. F. LARAWAY

DOCTOR OF OPHTHALMOLOGY

EYES
TESTED



LENSES
GROUND

Over 30 Years' Experience

Telescopes, Field Glasses

Magnifiers to examine scale

Hood River
Oregon

and

Glenwood
Iowa

ELLWOOD FENCE

MADE OF TOUGH SPRINGY STEEL

You Need Fence of Close Mesh But Don't Sacrifice Strength

A fence of close enough mesh to keep out rabbits and other small animals, which ruin young fruit trees, is a necessity to the orchardist. But it is equally important that the fence be sufficiently strong to turn large animals and to stand the test of time.

Ellwood Fence supplies both these requirements. In addition it is furnished with strand of barbed wire at bottom when desired, doing away with expense and work of extra strand, as is needed when plain bottomed fence is used.

Weight in fence is strength. Weigh Ellwood and you'll see that you get your money's worth.

The close 2-in. and 4-in. truss-brace mesh of the Ellwood Fence distributes strain over a wider area than do fences of more open construction, making a long-life fence. Also the hinged-joint construction, at every second cable effectually protects the cross or mesh wires by throwing the shock upon the heavy cable wires.

F. BAACKES, V. P. & G. S. A.
AMERICAN STEEL & WIRE CO.

CHICAGO NEW YORK DENVER SAN FRANCISCO

NOTE—Dealers everywhere. See the one in your town and have him show you the different designs and give prices. Also get from him booklet entitled "How to Build a Cheap Concrete Fence Post," furnished free for the asking.

LETTERS TO THE EDITOR

Paonia, Colorado, March 16, 1910.

Editor Better Fruit:

I have the copy of "Better Fruit" which contains the write-up of the Colorado National Apple Exposition. You certainly deserve the unqualified gratitude of Colorado apple growers for the expense you have gone to in issuing such a fine edition. The March issue is certainly a great edition and I am proud to have had the privilege of writing the leading article, poor and unworthy as it is. If at any time I can be of assistance to you in the preparation of an article you have only to call on me. My hope is that your patronage continues until you get even and make a barrel of money.

Very sincerely,

Clinton L. Oliver,
Secretary Colorado National Apple Show.

New York, March 18, 1910.

Editor Better Fruit:

We extend to you our sincerest compliments on your March number, which we consider the finest fruit paper ever issued. You are certainly doing wonders and deserve the thanks of everybody interested in the fruit industry. Mail at once 150 additional copies for distribution among the trade.

Steinhardt & Kelly.

[We appreciate the above telegram about as much as any we ever received, because it indicates that Steinhardt & Kelly appreciate the value of "Better Fruit" to the fruit growers of the Northwest. As sellers of Northwestern fruit in New York City to the most discriminating trade, they appreciate the importance of high-class work in every feature of the fruit business, and being close readers of "Better Fruit" they realize that we are giving the fruit growers all the modern, up-to-date and advanced ideas in growing better fruit and putting up a better pack. They indicate their belief by supporting "Better Fruit" liberally in this way and by constant advertising, from which they are getting splendid results. If more Eastern fruit dealers and commission men would take similar interest in the welfare of the fruit growing industry of the Northwest we believe a harmonious condition would prevail and better profits would be made by both the dealer and fruit grower—Ed.]

Toppenish, Washington, February 24, 1910.

Editor Better Fruit:

When you were here last week the writer gave you some figures regarding our 1910 plant, but was not dead sure he had the figures right. In order to correct any false impressions, we beg to advise that our total apple plant this year will be 5,000,000 trees. Our total plant of buds in peach, plum, prune and apricot is 1,400,000. Our total pear plant is 270,000; cherry 150,000. Making in all 6,820,000 trees, not including seedlings lined out and to be lined out in the nursery row for budding purposes, which in apples amount to about 200,000 and in pears 100,000. In addition to the above we are planting this year thirty bushels of apple seed, which will require about thirty acres, five bushels of pear seed and eight bushels of cherry seeds, besides eighteen tons of peach pits. All of this seedling stock grown this season will of course be budded for next year's crop of trees. The apple plant above mentioned will require about 250 acres alone, from which you can judge somewhat of the entire area of our plant this year,

BALL BEARING AUTOMATIC GATE

SEND FOR CIRCULARS OF ALL KINDS OF GATES

GUARANTEED THE SIMPLEST AND STRONGEST AND EASIEST OPERATED AUTOMATIC GATE ON THE MARKET.

DON'T I LOOK NEAT?

MONEY REFUNDED IF NOT SATISFACTORY IN EVERY WAY

ADAMS & ADAMS
1026 N. KAN. AVE.—TOPEKA, KAN.

THE MIRACLE OF WATER

Millions of acres of raw land are being reclaimed in the West by irrigation. Water makes this desert waste the most fruitful land in the world. No magician has wrought such wonders with magic wand. Interested? Send the coupon.

The Pacific Monthly Company,
Portland, Oregon.

Enclosed find 25 cents, for which please send me three recent numbers telling about the Miracle of Water.

Name _____

BF Address _____

which, including ornamental stock, staple fruit trees, vines, shrubbery, seedlings, etc., occupies about 500 acres.

Enclosed is copy for a page ad. We have had so many good responses from our ads in "Better Fruit" that we feel prompted when we have anything special to say to use enough space to say it right. Certainly you deserve a world of credit for the magnificent publication you are getting out. The fruit growers of the Northwest and of the entire country owe you a vast debt of gratitude.

Yours very truly,
Washington Nursery Company.

Palisade, Colorado, March 21, 1910.

Editor Better Fruit:

The March number of "Better Fruit" has just come to hand. I have been looking carefully over the contents and desire to offer a few words of commendation for the work you are doing for the fruit growers of the West. This issue of your journal is certainly a "humdinger"—the best of the kind, so far as my knowledge goes, ever published in this or any other country. Editorially, pictorially, typographically, it is a work of art, one that it would be difficult to improve. Colorado is given ample representation, and you have directed attention to its fruit section—the western slope—in a manner that cannot fail to be beneficial, affording ample proof of your statement that your work is for the benefit of the growers rather than for any particular section. Further than this, your attitude toward contemporaries in your particular line is an innovation in modern publications and should, and does, command the respect of your readers as well as the press. Wishing you every success in your work, I am,

Yours truly,
E. S. Sherman.

LIVELY INSTITUTE AT GRAND JUNCTION.—Over two hundred and fifty growers were in attendance at the Fruit Growers' Institute held in Grand Junction, Colorado, recently, and many growers and others anxious to hear the discussions and addresses were unable to secure admission, owing to the crowded condition of the courtroom in which the institute was held, says the Grand Junction Sentinel. Several professors of the State Agricultural College, under the aus-

It does not pay to bark or bruise your trees. Buy

SMITH'S WHIFFLE TREE FENDER'S



Sent to any address upon receipt of
75 cents. Send today.

C. H. SMITH Freewater, Oregon

Mr. C. H. Smith, Freewater, Oregon.

Dear Sir: I consider your whiffletree fender a big step in the right direction for the protection of nursery stock and orchard trees. I can cheerfully recommend this as a valuable device.

Very truly yours,
W. S. Thorner.

pices of which the institute was held, were present, among them being Professors Gillett, Bennett and Weldon. Prominent local growers and fruit men, including A. C. Newton, A. B. Hoyt, W. S. Chandler and others, participated in the meeting. In fact, in the discussions a great number of the growers participated. There were present also one or two gentlemen from the famous Hood River country. Fruit packing, grading and many other important phases of the fruit industry were discussed in a most interesting and lively manner. Demonstrations of packing were given.

Professor Bennett of Fort Collins presided over the spirited meeting. Professor Bennett succeeded Professor Paddock in the faculty of the State Agricultural College. He is a very able man.

Chris Greisen, of the famous Hood River country, and one of the editors of that popular magazine, "Better Fruit," was present at the meeting. He was here last year at a similar meeting. It is needless to say that the local fruit men made it warm for the good natured Hood River man and the debate with him formed one of the liveliest parts of the meeting. Mr. Greisen spoke on pack-



WANTED—A RIDER AGENT IN EACH TOWN

sample Latest Model "Ranger" bicycle furnished by us. Our agents everywhere are making money fast. Write for full particulars and special offer at once.

NO MONEY REQUIRED until you receive and approve of your bicycle. We ship to anyone, anywhere in the U. S. without a cent deposit in advance, *prepay freight*, and allow **TEN DAYS' FREE TRIAL** during which time you may ride the bicycle and put it to any test you wish. If you are then not perfectly satisfied or do not wish to keep the bicycle ship it back to us at our expense and *you will not be out one cent*.

FACTORY PRICES We furnish the highest grade bicycles it is possible to make at one small profit above actual factory cost. You save \$10 to \$25 middlemen's profits by buying direct of us and have the manufacturer's guarantee behind your bicycle. **DO NOT BUY** a bicycle or a pair of tires from anyone at *any price* until you receive our catalogues and learn our unheard of *factory prices* and *remarkable special offers to rider agents*.

YOU WILL BE ASTONISHED when you receive our beautiful catalogue and study our superb models at the *wonderfully low prices* we can make you this year. We sell the highest grade bicycles for less money than any other factory. We are satisfied with \$1.00 profit above factory cost.

BICYCLE DEALERS, you can sell our bicycles under your own name plate at double our prices. Orders filled the day received.

SECOND HAND BICYCLES. We do not regularly handle second hand bicycles, but usually have a number on hand taken in trade by our Chicago retail stores. These we clear out promptly at prices ranging from \$3 to \$8 or \$10. Descriptive bargain lists mailed free.

COASTER-BRAKES, single wheels, imported roller chains and pedals, parts, repairs and equipment of all kinds at *half the usual retail prices*.

\$8⁵⁰ HEDGETHORN PUNCTURE-PROOF \$4⁸⁰ SELF-HEALING TIRES A SAMPLE PAIR TO INTRODUCE, ONLY

The regular retail price of these tires is \$3.50 per pair, but to introduce we will sell you a sample pair for \$4.80 (cash with order \$4.55).

NO MORE TROUBLE FROM PUNCTURES

NAILS, Tacks or Glass will not let the air out. Sixty thousand pairs sold last year. Over two hundred thousand pairs now in use.

DESCRIPTION: Made in all sizes. It is lively and easy riding, very durable and lined inside with a special quality of rubber, which never becomes porous and which closes up small punctures without allowing the air to escape. We have hundreds of letters from satisfied customers stating that their tires have only been pumped up once or twice in a whole season. They weigh no more than an ordinary tire, the puncture resisting qualities being given by several layers of thin, specially prepared fabric on the tread. The regular price of these tires is \$3.50 per pair, but for advertising purposes we are making a special factory price to the rider of only \$4.80 per pair. All orders shipped same day letter is received. We ship C. O. D. on approval. You do not pay a cent until you have examined and found them strictly as represented.

We will allow a cash discount of 5 per cent (thereby making the price \$4.55 per pair) if you send **FULL CASH WITH ORDER** and enclose this advertisement. You run no risk in sending us an order as the tires may be returned at **OUR** expense if for any reason they are not satisfactory on examination. We are perfectly reliable and money sent to us is as safe as in a bank. If you order a pair of these tires, you will find that they will ride easier, run faster, wear better, last longer and look finer than any tire you have ever used or seen at any price. We know that you will be so well pleased that when you want a bicycle you will give us your order. We want you to send us a trial order at once, hence this remarkable tire offer.

IF YOU NEED TIRES don't buy any kind at any price until you send for a pair of the special introductory price quoted above; or write for our big Tire and Sundry Catalogue which describes and quotes all makes and kinds of tires at about half the usual prices.

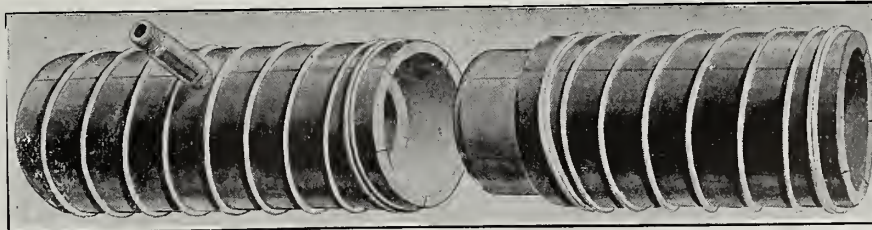
DO NOT WAIT but write us a postal today. **DO NOT THINK OF BUYING** a bicycle or a pair of tires from anyone until you know the new and wonderful offers we are making. It only costs a postal to learn everything. Write it **NOW**.

J. L. MEAD CYCLE COMPANY, CHICAGO, ILL.



Notice the thick rubber tread "A" and puncture strips "B" and "D," also rim strip "H" to prevent rim cutting. This tire will outlast any other make—**SOFT, ELASTIC and EASY RIDING.**

Estimates
Furnished
on
Application



Special
Attention Paid to
Pipe for
Irrigation
Purposes

PACIFIC COAST PIPE CO.

BALLARD STATION, SEATTLE, WASH.

Manufacturers of Continuous Stave and Machine Wire Wound Water Pipe from 2 inches to 14 feet in diameter
Over 100 miles of our pipe was furnished for irrigation during 1909

OLIVER'S SPECIAL ORCHARD PLOWS

No. 7 V

Write for
Circulars or
call on your
Nearest Dealer

Handles and
Clevis
Adjustable

Chilled or Steel



Showing plow
from rear, as if
at work among
trees, wheel
inside of
landside line.
Hub of wheel
does not project
to strike trees.
All levers down.
Third base can
easily be
attached.

No. 17 Two or Three Furrow Gang



Oliver Chilled Plow Works

Portland, Oregon

South Bend, Indiana

San Francisco

ing apples in "The Hood River Way." He dealt interestingly with the Hood River methods of picking, packing and grading apples, also marketing them. Many questions were asked him and a great deal of interest was shown, especially as to the face or Oregon pack. Questions were "fired" at the Hood River man thick and fast.

Professor Weldon followed, speaking on the subject of "The San Jose Scale." He said this scale had appeared in ten orchards in the valley last April, and it had since spread to twenty-seven more orchards in the same vicinity. The ten orchards had been sprayed with the lime-sulphur spray and the scale practically cleaned up. An

urgent plea was made by the speaker for a thorough spraying for this pest.

After dinner A. B. Hoyt gave an interesting talk on grading and packing. He explained the Grand Junction pack, which had proven satisfactory. A good many questions were asked and answered, and finally a motion was made that the meeting favored a law prohibiting the shipment of wormy apples outside of Colorado. The vote was almost unanimous in favor of such a law.

Professor Gillett then spoke on "The Codling Moth and Its Control." He gave many illustrations of the effects of spraying, and insisted that three sprayings were all that were necessary. He said that from two to four gallons of poison to each 100 gallons of water was as strong a solution as was necessary. If the first two sprays are done right the apples will be free from blemish.

Professor Bennett gave a short talk on the subject of pruning. A large number of fruit growers were present at the meeting and more interest was taken than in any meeting ever before held here.

◆ ◆ ◆

IDAHO APPLES from Washington County were prize winners at the National Apple Show at Council Bluffs, Iowa. The exhibit from Council Valley received awards as follows: Five cups, one gold medal, first premium on district exhibit, second premium on county exhibit, first premium on home orchard and better fruit, a special cup, first premium on best single box, first premium on three boxes Banana apples, three prizes on groups and twenty premiums on special plates.

◆ ◆ ◆

SPLENDID CLUBBING OFFER.—One of the best magazines published in the West, the Sunset, which tells all about Western life on the Pacific Coast and the Northwest, the possibilities and opportunities, not only in fruit growing, but in all other lines of business, and "Better Fruit," the best fruit growers' magazine published in the world, both for \$1.50.

WONDER OIL LAMP

Sent To Your Home



We want you to try in your own home, without risk or expense, our marvelous new, 100 candle power Wonder Oil Lamp, generates its own gas from common coal oil—burns on incandescent mantle. Six times cheaper than old style lamp and far more brilliant than electricity or gas. 40,000 families now using. The price of this lamp is \$6.00, but to introduce it quickly, we will make one person in each locality a **Special Free Offer**. Remember, if you send the Wonder Lamp, express prepaid. We want to place one for demonstration purposes in your home and ask that you recommend it to your neighbors. Let the Wonder Lamp light your home. Simply send your name and address today.

United Factories Co., Dept. 1 Kansas City, Mo.

AUTHENTIC INFORMATION

Railway men say the colonist movement westward in 1910 will be unprecedented. Thousands are harkening to the call and fortunes are being made now by the early arrivals. New railroads are opening up vast, almost limitless new territory. Let us tell you about it. Send 25 cents in stamps for information.

The Pacific Monthly Company,
Portland, Oregon.

Enclosed find 25 cents for three recent numbers containing articles relative to land conditions in the West.

Name.....

BF Address.....

Disc Your Ground an Even Depth



Send us your
name and
address for this
Free Booklet
In Colors

Tells how to get
even discing for per-
fect seed beds.

The Deere Model B Patented Spring Pressure Secures Even Penetration

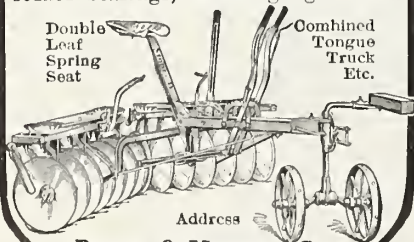
There are just as many good reasons for even depth discing as for even depth plowing and our Free Booklet shows how and why the Model "B" does this work best.

Ask us to mail you Free Book No. B 46 and we will also send our **Latest Corn Book and Farmers Pocket Ledger**, all without charge.

It pays to use high-grade tools.

Keep posted on up-to-date methods.

Other exclusive features of the Model "B" are extra high arch frame, scrapers without rivets or set screws, hardwood, oil-soaked bearings, all-steel gang frames.



Deere & Mansur Co.

Moline, Illinois

ORCHARDIST SUPPLY HOUSE

FRANZ
HARDWARE CO.

Hood River, Oregon

Marlin



This rifle is built
for settled districts,
where good range and killing
power are desired, with safety
to the neighborhood.

The Marlin .25-20 is a light, quick-handling, finely-balanced repeater, with the solid top, closed-in breech and side ejection features which make Marlin guns safe and agreeable to use and certain in action.

It is made to use the powerful new high velocity smokeless loads with jacketed bullets as well as the well-known black powder and low pressure smokeless cartridges, and is the ideal rifle for target work, for woodchucks, geese, hawks, foxes, etc., up to 300 yards.



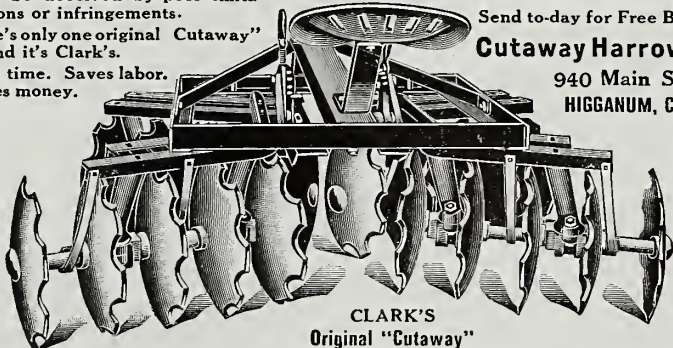
This rifle and ammunition, and all other Marlin repeaters, are fully described in our 136-page catalog. Free for 3 stamps postage.

The Marlin Firearms Co.,
Willow Street, NEW HAVEN, CONN.

BOISE VALLEY, Idaho, with its fertile lands and rich, sweeping benches, sometimes spoken of as the land of the "big red apple and purple prune," its two most staple fruits, will, if the present weather conditions continue, enjoy the bumper fruit crop of its history, for indications now are that the yield will be heavier, the variety better, the quality the very best, and the market steady, with a demand for every ounce that can be picked from the trees. Conservatively speaking, the crop will bring hundreds of thousands of dollars to Boise Valley farmers this year, more than ever before, due to the fact that a larger number of orchards will come into full bearing. The horticulturist is the most enthusiastic resident of the valley now, for Idaho sunshine and its rich soil are combining to bring forth actual and profitable results. The fruit crop expected during the coming season will not be an off-year one, for a small yield and an off-year was the experience of horticulturists last season. They are all living in hopes of a big crop this season, and a yield of this nature means money in the pockets of the fruit raiser. The present spring has opened with conditions decidedly favorable. An unusual winter, the worst for the past twenty-five years, has made amends to some extent by ushering in a spring that is emblematic of Idaho and warm days which have already started the peach and prune trees to budding. If the late frosts can be guarded against the valley will grow any and all varieties of fruit. The latest frost preventives have been installed by many of the more progressive farmers and orchard heating is the slogan to which they are rallying. This cannot help but mean one thing—the protection of the apple, peach, prune, apricot and pear buds from being nipped by the late frosts. Large acreage will be planted in the valley this spring to commercial orchards and of these winter apples will greatly predominate. It is the intention of the Wilson Orchard Company to plant several hundred acres to fruit. This company recently sold out a large tract of orchard land, but has about sixty-seven acres left. H. B. Allen and the McBirney Fruit Company have also made plans to set out hundreds of trees, while parties from Iowa who recently purchased the old Curtiss farm near Meridian have taken steps towards planting the entire farm of 200 acres to fruit. The small tract farmer is also coming into his own and will plant a great many trees this year. Gradually the old hay ranches, for which this valley has been so well known, are disappearing, and they are being cut into orchard farms, with modern and experienced horticulturists setting out trees and engaging in this profitable industry. The appearance of the valley shows a marked improvement. The tendency here is fast gaining ground to subdivide the larger farms into profitable acreage properties,

the popular sizes being five, ten and twenty-acre tracts, practically all of which is either in fruit or being prepared for it. In order to encourage the industry and to bring to the doors of the fruit growers everything needed to make farming easy and the growing of fruit a pleasure, numerous factories for the manufacture of labor-saving devices have been installed. At Meridian, located in the center of the valley, is what is known as the Boise-Payette Valley Spray Manufacturing Company. This is the only plant of its kind between Ogden, Utah, and Hood River, Oregon. The company is capitalized at \$25,000 and the stockholders are all fruitmen of the valley. It will manufacture all kinds of sprays for trees.

The Stephens Orchard and Nursery Company has a valuable tract of 300 acres of land in the valley which has been set out to commercial orchard. It is considered one of the most perfect young orchards in Idaho. Something of the perfection of this big young orchard can be realized from the fact that the land was so leveled at first that it irrigates perfectly. The six-foot space for the tree rows was plowed and subsoiled in such a way that a regular storage reservoir of moisture was formed, and the excellent growth of the trees shows the effect of the method. The orchardists of Nampa are also giving the matter of orchard heating considerable attention. This city is located at the western end of the valley. J. W. Pittenger.



CLARK'S
Original "Cutaway"

LESS WORK

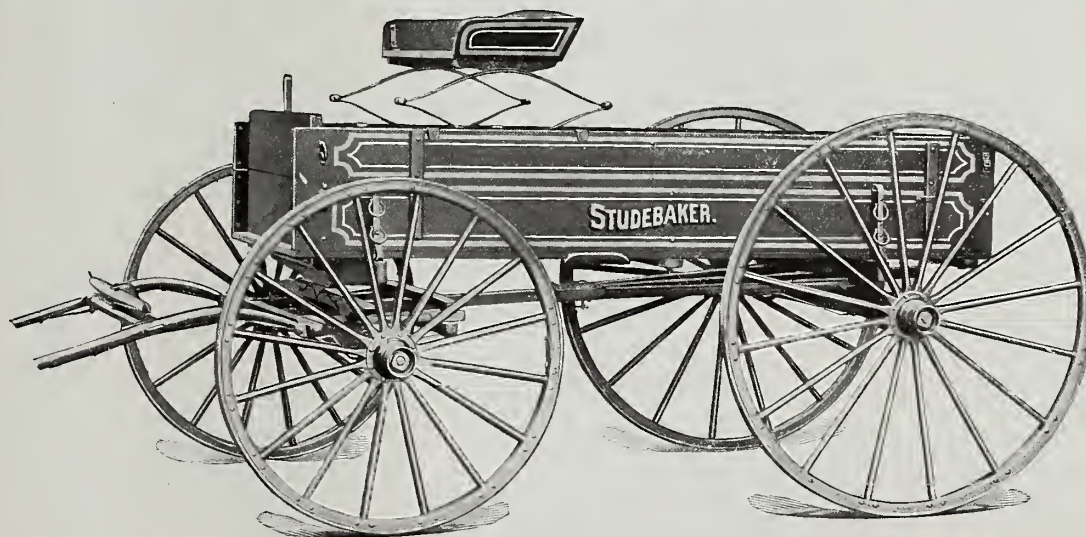
Drawn by two medium horses. Will cut 28 by 30 acres or double-cut 15 acres in a day. Will move 15,000 tons of earth one foot in a day. Runs true in line of draft and keeps the surface true. All other Disk Harrows have to run in the half lap. Has Improved reinforced main frame, and improved standards. Don't be deceived by poor imitations or infringements. There's only one original Cutaway and it's Clark's. Saves time. Saves labor. Saves money.

CLARK'S CUTAWAY TOOLS

BIG CROPS

Crops increased 25% to 50%. Better Grain, better Hay, better Fruit. Takes place of Plow and Harrow. Jointed Pole takes all the weight off the horses' necks. We make 120 sizes and styles of Disk Tools. Every machine fully warranted. Thousands in use and giving satisfaction. If your dealer won't supply you, we will.

Send to-day for Free Booklet.
Cutaway Harrow Co.
940 Main Street
HIGGANUM, CONN.



Studebaker
one-horse
wagons---the
best wagon on
earth. Prices on
these wagons
reduced January
1, 1910. Don't
buy until you
get the NEW
PRICE on a
Studebaker.

Studebaker vehicles cost no more than others. We want you to have our catalogue---a postal card will bring it to you, together with the name of the nearest agent.

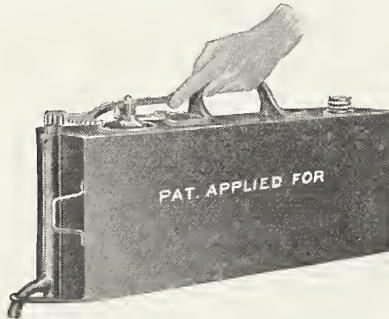
Agencies at Hood River, The Dalles, Medford, Ashland, Grants Pass, Wenatchee, North Yakima, and two hundred other points in Oregon and Washington.

STUDEBAKER BROS. CO. 330-336 E. Morrison Street, PORTLAND, OREGON
Wagons, Buggies, Harness, Automobiles

of the Nampa nursery, at present has one of the largest orchards in this section, containing fruits of all kinds. He has equipped his orchard with a complete heating plant and is acting in co-operation with the Boise Valley Fruit Growers' Association in this work. He will get his oil supply from the trainload that is to be furnished the valley and this section of the state by the association for the purpose of supplying heating plants in orchards.

AT THE National Apple Show, Denver, Colorado, the second prize on carloads, \$500, was awarded to a car of Black Ben Davis apples, grown on one hundred and sixty Stark Bros. trees at Fruita, Colorado.

RAPID LIGHTER—For use in lighting smudge pots in orchard heating. This can holds one gallon of gasoline and is carried in the left hand, while a torch is carried in the right. The torch handle can be so constructed as to quickly knock or pull off the cover of the previously filled oil pot, then with the index finger move the spring-acting lever on top of the gasoline can, over the smudge oil pot, and instantly there drops a thimbleful of gasoline. Apply the torch to the dropped gasoline, which ignites and in every case starts the



gas and fire in the smudge oil, and off you go to the next pot. It requires less than one-sixteenth of a second to drop the gasoline and fire each smudge pot. In fact, if running, you will hardly come to a full stop at each pot. One gallon of gasoline will be enough to light more than 800 pots. The saving of time is enormous, also the saving of labor and material. The mechanism is so constructed that it drops just so much gasoline for each manipulation of the lever, no more, no less. It is impossible to have an explosion in case the torch and gasoline can come in contact. It is durable; all the mechanism is made of brass, so it will not rust or corrode, and every can is guaranteed. Price \$4. Address John Steel, 544 Brandies building, Omaha, Nebraska. References: First National and United States National Banks of Omaha and the Commercial Club of Omaha.

Can Your Surplus Fruits and Vegetables Big Profits

Don't let your surplus fruits and vegetables go to waste. Can them the same as a large canning factory. There's always a market for canned goods, and for a small investment you can buy a



STAHLL
Canning Outfit
and build up a big, profitable business. All sizes; fully guaranteed. Write for catalogue. F. S. STAHLL MFG. CO., Box 301-D, Quincy, Ill.

D. McDONALD

Hood River, Oregon

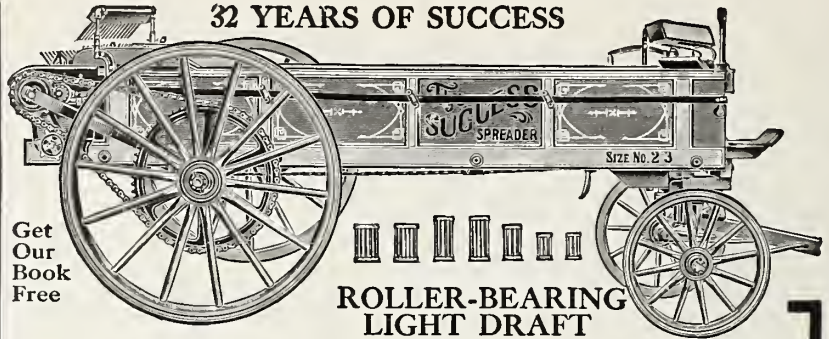
Headquarters for
FARMING AND ORCHARD

TOOLS

Disc Harrow Extension for
Orchard Cultivation a Specialty

When you want any kind of Orchard
Tools come to me and get the Best

32 YEARS OF SUCCESS



SUCCESS SPREADER

The only spreader with a 32-year record of good work. Simplicity, Durability and Light Draft always foremost. Direct Chain Drive. No Cog Gears. The choice of men who investigate thoroughly. Wood or metal wheels. A generation of experience back of every Success. The leader from the first. Exclusive features all patented. Catalog of facts Free. Write us promptly.

Kemp & Burpee Mfg. Co. SYRACUSE N. Y.

Increase your orchard yield

Bigger better fruit and more of it will be the result if you use the Planet Jr No 41 Orchard and Universal Cultivator to give your orchard thorough cultivation.



Planet Jr.

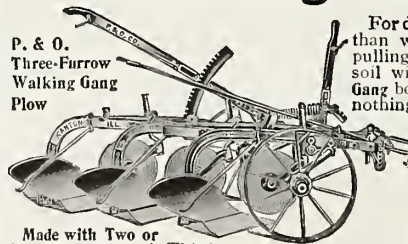


No. 41 is the greatest help you can have in orchard, vineyard, and hopyard. Saves time and labor besides doing better work. It is built especially for your work by a practical farmer and manufacturer, with over 35 years' experience. Unusually strong construction, yet easily handled. Equipped with attachments which cultivate, hoe, and furrow to any desired depth; also has side-hitch and fruit and tree shield. Can be made into disc-cultivator. Every implement fully guaranteed.

We carry stock in San Francisco. Agencies in all principal Pacific Coast cities. Write for name of nearest agent. Send for our new illustrated catalogue of 1910 Planet Jr implements, describing tools for every farm and garden use. Free.

S L Allen & Co Box 1106 U Philadelphia Pa

P & O Walking Gang Plows

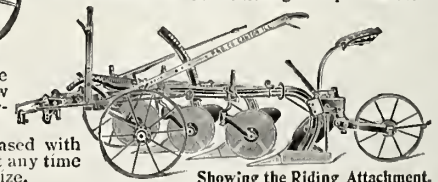


P. & O.
Three-Furrow
Walking Gang
Plow

For downright hard work, when you need a plow that will stand hard usage, that will stand the pulling strain of eight or ten horses in any kind of soil without being damaged, the P. & O. Walking Gang beats them all. As it has no frame, there is nothing to get out of order. Provided with three levers, allowing a wide scope of adjustment. Square corners can be made without raising the bottoms out of the ground. No gang plow made can equal the P. & O. in turning sharp corners.

Made with Two or Three Bottoms. A Third Plow Attachment can be added to the Two Furrow Plow. The Three Furrow Plow can be cut down in size by removing the outside beam and bottom.

A Riding Attachment can be purchased with the plow, or at any time in the future. It is made to fit either size.



Showing the Riding Attachment.

Insist on getting P. & O. implements from your dealer. They are Backed by an Unqualified Guarantee. A Beautifully Illustrated Pamphlet, and a P. & O. Catalog, will be mailed Free. Write for Catalog No. Q 155

PARLIN & ORENDORFF CO., CANTON, ILLINOIS

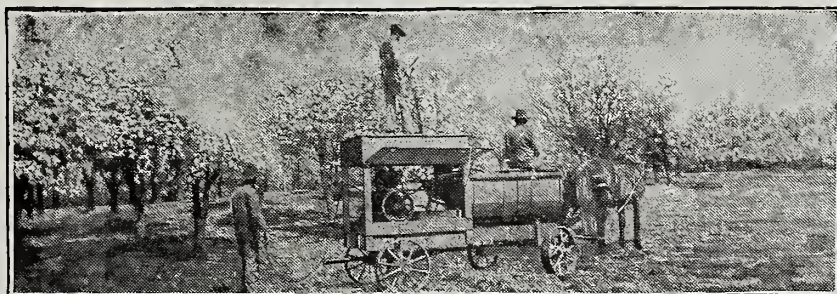
UNION COUNTY, OREGON, has within its boundaries many thousand acres of prime fruit land. For a long time fruit raising has been incidental to general farming, and it is surprising, considering the negligence of the farmer-orchardist, that Union County fruits have maintained their excellence. However, as is characteristic of the Westerner, the settlers gradually began to specialize, as it was found that the income from a well tended commercial orchard was sufficient to justify such special attention as it demanded. And so in Union County we have passed from the farmer-orchardist to the business-orchardist. Today there are fully 10,000 acres in orchard or being planted to orchard, bearing and to bear superior fruits. Nearly all this acreage in orchard is in Grande Ronde Valley, and many a farm which for many years was farmed by one individual is now supporting from ten to twenty families, each one of which is receiving as large an income from their small tract as the man who formerly farmed it usually received. Grande Ronde Valley, nestled among the Blue Mountains, is the second largest

valley in the State of Oregon, containing about 330,000 acres. In width it varies from a few miles at its narrowest part to about eighteen miles at its widest, and is about thirty miles in length. It is shaped like an egg. It is not impossible that Grande Ronde Valley will eventually become one vast orchard, as more acreage is yearly being set to orchard and the large grain farms are quickly diminishing in size. The greater portion of Grande Ronde Valley is sub-irrigated, and as but very little of it is what could be called semi-arid, the question of irrigation is not considered as important as it is in those localities where irrigation is an absolute necessity. However, it has been demonstrated that a little irrigation is a great benefit, and a project is now under way for the furnishing of sufficient water to irrigate 30,000 acres of land from a storage reservoir near the head of Grande Ronde River. The low price at which it is agreed to furnish this water is a marvel, being twenty dollars per acre, with the privilege of paying for it in ten annual installments. The prices at which water is furnished in the government projects seems very high when compared with the price at which it is agreed to furnish water to the residents of Grande Ronde Valley by private enterprise. The fruit growers of Union County are also forming a very strong fruit growers' union, patterned after those unions in the Northwest that have made a success, and at all times Grande Ronde Valley fruit will be in evidence as among the best raised and marketed in the Pacific Northwest. The good roads movement in Union County also has a good start, and with a goodly number of our farmers owning automobiles they will clamor for more good roads, as they will not be satisfied with the same roads over which they were wont to drive in their buggies. The city of La Grande is the commercial center of Union County, with a population of nearly 6,000, and has the second largest monthly pay roll in the state. Paved streets, sewerage and a new \$75,000 high school are the improvements under way for 1910. La Grande has one of the most energetic commercial clubs in the state, and anything good that they go after is sure to be landed. More railroads are needed for Union County, and these

are bound to come when the attention of capitalists is attracted to the great productiveness of this section. An electric line to belt the Grande Ronde Valley is about to be promoted, and this will tend to give great impetus to the development and progress of Union County.

VEHICLES AND AGRICULTURAL IMPLEMENTS

THE BEST OF
ORCHARD AND GARDEN TOOLS
A SPECIALTY
**GILBERT - VAUGHAN
IMPLEMENT CO.**
HOOD RIVER, OREGON



FOR RAPID THOROUGH WORK CHOOSE THE I H C SPRAYER

GET ready for spraying time with a dependable outfit, one that will enable you to do the work rapidly, at the right time, with least expense and sure results. I H C power sprayers are made in all styles and sizes for all purposes—orchard, field and vineyard. One of them will just meet your needs. Complete outfits—engine, pump and all accessories, mounted on skids or wagon trucks as ordered.

Blue prints furnished for building your own spray wagon, housing, tank, etc.

Use the Engine All Year 'Round

One of these outfits is an every-day-in-the-year money-maker. Detach your 1 or 2 horse-power engine from the spraying pump and operate your grinder, fanning mill, separator, churn, pump, thresher, huller, cutter, grindstone saw-mill—or any other machine.

I H C engines are celebrated for their simplicity, economy of fuel consumption and reliability. They are solving the "help" problem for fruit growers, farmers and gardeners everywhere. We have issued a complete catalogue on spraying. Don't tie up money in a spraying outfit that you can use only for spraying. Investigate the I H C line of general purpose engines. There are many styles and sizes, from 1 to 25 horse power—an engine for every section and every problem, for all farm uses—vertical and horizontal (both stationary and portable), engines on skids; sawing, pumping and spraying outfits. It also includes gasoline tractors, first-prize-gold-medal winners, the best all-round farm tractors. Call on our local agent, or write International Harvester Company of America at nearest branch house for catalogue and full information today.

WESTERN BRANCH HOUSES: Denver, Col.; Helena, Mont.; Portland, Ore.;
Spokane, Wash.; Salt Lake City, Utah; San Francisco, Cal.

INTERNATIONAL HARVESTER COMPANY OF AMERICA
(Incorporated)

Chicago U S A



THE I-H-C LINE

LOOK FOR THE I. H. C. TRADE MARK. IT IS A SEAL OF EXCELLENCE AND A GUARANTEE OF QUALITY

WHEN WRITING ADVERTISERS MENTION BETTER FRUIT

IF YOU WANT TO KNOW MORE ABOUT THE WEST,

Resources, opportunities, life, literature, etc., don't delay, but send the coupon at once. The West of today will astonish you. There is something doing in the empire beyond the Rocky Mountains that will interest you. Get in touch with a live land, where fortunes await the willing.

The Pacific Monthly Company,
Portland, Oregon.

Enclosed find 25 cents. Please send three recent numbers containing information about the West.

Name _____

BF Address _____

Better Farming

A John Deere Book
—Just Out
A Farmer Can Get It Free

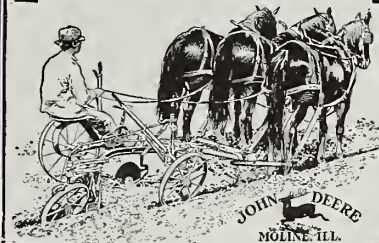
IF interested in farming, get our FREE book called "BETTER FARMING." It tells all about—

Alfalfa	Making Hay
Dairying	Fighting Frost
Seed Wheat	Silos
Corn Crops	Cultivation
Stock Feeding	Cotton Crops
Art of Plowing	Soil Fertility
Boll Weevil	Gasoline Engines
Controlling Weeds	Adjusting Plows

Hired Help Costs Big Money

Your land is high priced and hired help expensive. There is only one way to make big money—use implements that cut down the cost of your crops. Isn't it true that when you break something on a plow it is nearly always a cast part? Wherever strain comes on a John Deere Plow there you will find steel—tool steel. Take any plow that has had hard work for five years, put it along side of a John Deere which has been in service that long—and see the difference. Then there is no paint to cover up poor material. You can see the wear and the defects. The John Deere will be solid, staunch and ready for the hardest job. Then you begin to know that quality counts.

You can take pride in owning a John Deere—the standard plow of the world for two generations.



We will send you the 80-page, illustrated book free if you write and ask for
Package No. 46

Mention the package number sure, then you will get exactly the right stuff.

DEERE & COMPANY, MOLINE, ILL.

Get First Crop Started Quickly

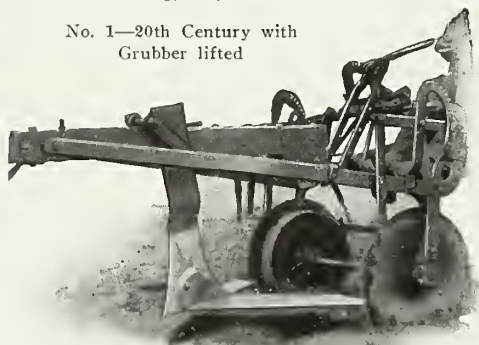
Make Your Money Come Back Quick

Compel your land to return your investment with big interest. You must take advantage **now**—this spring—of every passing hour. Every minute means money, means profit if you move quickly with the right machinery. By the newest method you can get onto your land, this spring clear it of sage brush, level off the hummocks, and fill in the hog wallows, cut your laterals, connect with the supply canal, get crops this same season.

One man—**you**—with four horses can do “wonders” with the 20th Century Grader and Ditcher; you can grub, level, cut and clean laterals, throw borders, make roads, move dirt as you choose.

GRUBBING

No. 1—20th Century with
Grubber lifted



Here's your quick grubber. The moldboard has been removed, the grubber fixed in its place. To the steel upright, at its bottom are bolted two keen-edged crucible steel knives. The driver with a convenient lever drops or raises the grubber as he pleases. These two knives pass along beneath the surface and slash off the small roots at the weakest place. Read the rest of the story in the catalog. Cut off the “Free Ticket” below and send it in. It explains why—

PLOWING ISN'T NECESSARY

20th Century with fenders
attached for leveling and
carrying dirt to hollows



If you don't have to plow you get your planting done quickly, and get all the benefit of the first water turned on. Grubbing with a 20th Century costs \$1.25 to \$1.75 per acre. You—**one man**—can grub four to five acres a day.

20th Century Grader

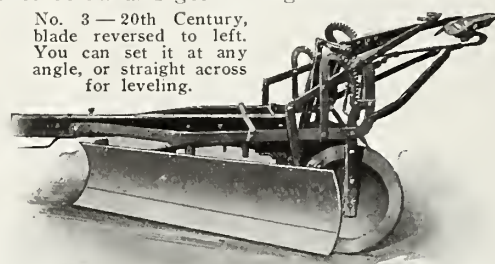
The Great, Many Purpose
Irrigation Machine

LEVELING

“Convenient”—that's the term—that applies to the 20th Century. Its reversible moldboard can be swung to any angle for leveling and grading. It also has “fenders” which can be attached in ten minutes.

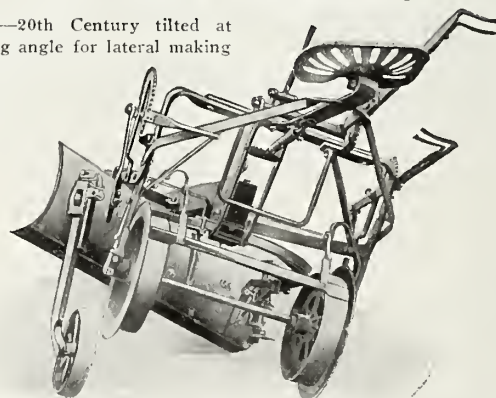
They keep dirt from sliding off ends of moldboard. Thus you can carry and “spill” dirt as you choose. (See Cut No. 2.) These fenders are 12 inches high and 24 inches wide. You must slope your land at a gradual angle from your main ditch. The 20th Century will do it for one-half to one-third the usual cost. You—**one man**—can do it. The new catalog tells how. Cut off the Ticket below and get catalog free.

No. 3—20th Century,
blade reversed to left.
You can set it at any
angle, or straight across
for leveling.



CUTTING LATERALS

No. 4—20th Century tilted at
ditching angle for lateral making



“V” shaped laterals carry water with least waste. 20th Century cuts them 12, 15, 18, 24, 36 inches deep. Cost 1.25 to \$1.50 a mile. One man—**you**—can cut four to five miles a day. Once up, once back in moderately soft ground is sufficient for an 18-inch lateral. Send the “Free Ticket” below for a “fistful” of particulars in our catalog.

The Baker Manufacturing Co.

742 Fisher Building

CHICAGO

FREE TICKET

To the Baker Mfg. Co.

742 Fisher Building, Chicago

I own.....acres of.....land
(how many) (raw or improved)

in..... Please send me that new catalog.
(location)

Name

Address

Town..... State.....

INSTITUTE MEETING IS HELD AT NORTH YAKIMA

FRUIT DISTRICTS of the Northwest will soon be surprisingly divided into specializing areas, said E. H. Shepard, editor of "Better Fruit," of Hood River, Oregon, at the opening session of the Farmers' Institute at North Yakima, Washington. "One variety of fruit," he said, "will do better in one section than in another and will be raised there exclusively. We are trying that already in my home in Hood River."

Mr. Shepard and Professor Thornber of Pullman, Washington, commenced the institute at Ellensburg and will go on to Sunnyside, says the North Yakima Republic. Mr. Shepard, introduced by M. N. Richards, considered "The Essentials of Successful Fruit Growing" in the following address:

"Industry and application are two essentials of first importance; the other essentials are not so exacting. Many persons make the mistake of buying cheap trees. Five cents more a tree will amount to only \$3.50 more an acre, and you know that one good bearing tree will more than make up the difference. Prune your trees low. Cultivate thoroughly, using cultivation instead of irrigation. Do not be governed entirely by market prices in selecting varieties, but pay attention also

to quality and to market conditions. Air drainage is an essential. Trees are like people; they need the fresh air. Apples should be thinned out until those that are left are four, five or six inches apart. Proper and thorough spraying is another essential; and spraying should be intelligent. Get the cocoon of a codling moth and keep it where you can see for yourself when it is time to spray."

Professor Thornber took for his subject "Planting an Orchard," saying: "I have found men preparing to plant in places in which nothing but failure awaited them. Their land may have been good, but it was not adapted to fruit growing. Good water drainage is one essential, and good air drainage is another. Avoid hardpan. Your trees need three or four feet of good soil, not necessarily of surface soil, however. Alkali is largely a plant food. Too much of it, however, is a poison. If you have good water drainage you will probably be little troubled by alkali, but the best land in the Yakima or Wenatchee countries can be spoiled by alkali if mistreated in watering. Do not get in too big a hurry to plant. In six or ten years you will make time by planting the first year a crop of oats or vetch. Beans or clover are capital. Alfalfa is ideal, only it is not easy to get it out of the land. In its original state, the nutrient in the sagebrush land is in a 'locked' condition. Select your stock. The smaller trees are the best. If possible, have your young trees propagated from bearing trees. Trees have individuality like cattle or dogs, and if you can have your nursery propagate stock from trees with which you are personally acquainted, it will be worth the extra expense. The use of fillers depends on the grower. A wise man can use them and a fool can't. The chief difficulty is in being unwilling to take them out when it is time. Fillers, especially peach fillers in this country, must be unmercifully pruned. To make a grandstand play the last year, they may be girdled in June of the year preceding the last."

Professor Thornber's remarks concerning girdling caused much interest. Many questions were asked and many cautions in the matter emphasized. Over 200 persons were present in the afternoon—very enthusiastic persons, who kept the speakers busy answering questions. Professor Thornber considered "Pruning Fruit Trees," illustrating his remarks by drawings on the blackboard showing the method by which he seeks to build up in the first four years of the tree's life a strong branch system which will support the fruit. "After the fourth year plant on a thin top, though not on an open top," he said. "Prune to keep the tree from lying on the ground." Numerous questions

were asked concerning the pruning of pear, apple and peach trees, the supporting of loaded limbs, pruning of tops to meet the wind and similar matters. Mr. Shepard closed the afternoon session with a talk on "Fruit Packing," discussing the merits of the various packs and the systems of grading.

◆ ◆ ◆

BOGUS FRUIT ON LONDON MARKET.—

Bogus Oregon apples are being put on the market in London, England, according to a letter received by the Hood River Apple Growers' Union from Garcia, Jacobs & Co., fruit dealers in London. Hood River apples have not been faked and none of them for this season have yet been put on the foreign market by Steinhardt & Kelly of New York, who bought the entire crop, but the English fruit men say that a carload of Newtowns bearing the well known Bear Creek label of the Rogue River Valley were sold in London which they believed did not come from Oregon at all. In their letter they said: "The trouble is that apples from Oregon, Washington and Idaho are advertised here indiscriminately as Oregons, and we think this is a matter which should be taken up by the associations on your side." C. E. Whistler, manager of the Bear Creek orchard, states that he has not been advised as yet of the offering of fruit under his label, and regrets it very much, in spite of the gratification of knowing that his orchard has become a by-word of quality in the foreign markets.

EAGLE BRAND ARSENATE OF LEAD

Produces better results than other brands, because—it is made so as to possess the greatest strength and insecticidal properties; remains a long time in suspension with water, affording a uniform spraying mixture; adheres to the foliage, and does not scorch even when heavily applied. Highly recommended by agricultural experiment stations.

CHAS. H. LILLY CO.

Western Distributors SEATTLE, WASH.

ORTHO Arsenate of Lead

Does not burn foliage, and it will control all leaf-eating insects and the codling moth.

**California
Spray-Chemical Co.**

Watsonville, California

Sales Agents:

Bean Spray Pump Co.

San Jose, California

WE MANUFACTURE Ditching Machinery

FOR EVERY KIND OF DITCH
Employed in irrigation and land drainage

The AUSTIN DRAINAGE EXCAVATOR

is the only machine that digs ditches with sloping banks and bottom true to grade in one operation. It is the only ditching machine that cuts a trapezoidal or a curved cross section with equal facility and to exact templet. An irrigation ditch dug with an Austin Drainage Excavator is so true and perfect in shape that it forms the only pattern necessary for placing concrete or other lining.

We sell outright or lease Send for our Catalogue "K"

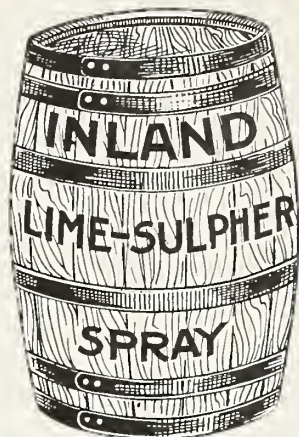
OUR FULL LINE COMPRISES

The Austin Drainage Excavator.	The Austin Orange Peel Ditcher.
The Austin Levee Builder.	The Austin Rolling Platform
The Austin Drag Line Excavator.	Traction.
The Austin Side Hill Ditcher.	The Austin Tile Ditcher.
The Austin Highway Ditcher.	The Austin Stump Puller and
	Grubber.

N. B.—Agents wanted in unoccupied territory

F. C. Austin Draining Excavator Company
Railway Exchange, Chicago, Illinois





THE C. G. BETTS CO.

INLAND BRAND

Lime-Sulphur Bordeaux Sulphur Arsenate of Lead
 Creoseptic Bluestone
 Flume Cement Arsenate of Soda Lead Asetate

Our goods are made to comply with government requirements

SPOKANE, WASHINGTON

MISCELLANEOUS NEWS ITEMS OF THE NORTHWEST

The Snowy Butte orchard, the property of the Ollwells, was sold by Fred Hopkins for \$168,000.

Bear Creek orchards, in Southern Oregon near Medford, owned by Hunt Lewis, were recently sold for \$160,000.

The large orchard of C. L. Allen, which is said to be one of the best in the Bitter Root Valley, Montana, has been purchased by the Allomet Orchard Company. It consists of 6,000 bearing apple trees and 7,000 bearing cherry trees. It is being divided up into small tracts to be sold to

individuals. We always like to see big orchards divided up into smaller tracts. The particulars about the price of these tracts can be secured by writing C. L. Allen, Aberdeen, South Dakota.

M. L. H. Odey, secretary of the Chamber of Commerce, Hamilton, Montana, is working hard in the fruit industry opposing the Lafean bill.

A Wenatchee apple orchard consisting of ten acres of five-year-old trees sold for \$30,000. Such a price indicates the splendid confidence in Wenatchee as a fruit district.

J. H. Heilbronner of Hood River recently sold his twenty-acre orchard, two-year-old trees, for \$30,000 cash. The property has no buildings, and no equipment was included in the sale.

W. E. Sherman recently sold his interest in the Friday-Sherman orchard for \$1,750 per acre. No improvements or equipment on the place. Located about five miles from the city of Hood River.

W. N. Richards of North Yakima in a recent address is quoted as saying that it is time for the rivalry of the Northwestern fruit growers to cease and for all to work together for the common advancement of the fruit industry. This sentiment is endorsed by Wenatchee, Hood River, Moscow, Missoula and other fruit districts.

The biggest orchard transaction ever occurring in the history of the business, so far as we know, is the sale of the Burrell orchard of 600 acres near Medford, Oregon, which we understand was sold to H. J. Neeley and associates for \$500,000. When capital is invested to the extent of half a million it is certainly very significant that orchards are considered gilt-edge investments.

The institute meetings held throughout the Yakima Valley under the direction of the staff of the experiment station of Pullman, Washington, are universally conceded to have been the largest, most interesting and enthusiastic ever held in the State of Washington. The attendance was very large at every one of the meetings, which were held at Ellensburg, North Yakima, Sunnyside, Prosser and Kennewick.

Joseph A. Wilson, one of the first settlers to plant an orchard in Hood River Valley, and the first manager of the Hood River Apple Growers' Union, has been sent by Hood River to Washing-

HEADQUARTERS FOR

CENTURY SPRAY PUMPS

Hose, Nozzles, First-
class Plumbing Supplies

C. F. SUMNER

Successor to Norton & Smith

HOOD RIVER, OREGON

Hemingway's

ARSENATE OF LEAD

A Perfect Product
Properly Packed
Honestly Priced

*Guaranteed to meet
the requirements of the various
State Agricultural Authorities*

For Coast Prices and Supplies
Address the Agents

KERR, GIFFORD & CO.

Portland, Oregon

LILLY'S BEST SPRAY BOOK

MOST complete addition of its kind ever published on the Pacific Coast. Contains a Spray Calendar compiled by the State Experiment Station—Illustrations, Descriptions and Habits of Insects and Diseases peculiar to plants and fruits of the Pacific Coast—Spray Machinery, and how to use it—and a list of tested Sprays and Insecticides. It is a PRACTICAL GUIDE, and will be sent free to anyone interested.

The CHAS. H. LILLY CO., Seattle

"ORWOOD" FRUIT SPRAY

A spray made entirely from wood oils and wood acids.

A spray that is a positive fungicide.

A spray that is positively fatal to all scale and aphids.

"Orwood" fruit spray is the most efficient winter spray for mosses, fungus, San Jose and other scale and all pests requiring winter spraying.

For summer spraying for fungus, scab, scale and all the forms of aphids, "Orwood" spray is unequalled. No fungus can germinate or live where it is used, and it is fatal to all the sap-sucking pests. It will not spot foliage or fruit.

For borers, paint the tree trunks with "Orwood" spray at its full strength.

Paint your poultry house with "Orwood" spray at its full strength and eradicate all insect pests.

If your dealer does not carry these articles write

OREGON WOOD DISTILLING COMPANY

Works at Linnton, Oregon

418 Mohawk Building

PORTLAND, OREGON

WHEN WRITING ADVERTISERS MENTION BETTER FRUIT

ton, D. C., to oppose the Lafean bill. Mr. Wilson takes great pride in the apple industry of Hood River and is always ready and willing to assist in promoting the interests of this section and is a ready champion for the fruit industry in general and an able representative of Hood River. Mr. Wilson had charge of the Hood River exhibits at the Alaska-Yukon-Pacific Exposition, and went to the Land and Irrigation Congress, assisted by Sam Campbell, in charge of the carload of Hood River apples which was on exhibition at the exposition. He is not only well informed on the fruit industry, but an experienced orchardist, and makes an able representative.

W. T. Clark, a large orchard owner of Wenatchee, president of the First National Bank of Wenatchee, of the Wenatchee Canal Company and of the Washington State Horticultural Society, is reported as having gone to Washington, D. C., to oppose the Lafean bill.

C. E. Whistler, one of the owners of the Bear Creek orchard, has been sent by his district to Washington, D. C., to oppose the Lafean bill. Fruit growers of Southern Oregon were wise in their selection, because no more able representative can be found in the Northwest to represent the apple industry.

Walla Walla during the month of January held a packing school in the Y. M. C. A. for the purpose of improving apple packing. The chief in charge of the packing instructions was one of the Hood River apple packers. The first packing school ever held in the Northwest was held at Hood River in 1908 under the auspices of the Hood River Apple Growers' Union. The idea immediately became popular and packing schools have been held at Wenatchee, North Yakima, Walla Walla and other places throughout the Northwest during the past year.

The Clackamas County Horticultural Society held a very enthusiastic meeting in Oregon City during the month of February and addresses were given by a number of prominent people. The following varieties of trees were recommended very highly: Yellow Newtown, Rome Beauty, Grimes Golden and Baldwin.

C. H. Sproat, secretary of the Apple Growers' Union of Hood River, made a trip to Denver to appear before the Western Fruit Jobbers' Association for the purpose of opposing the Lafean bill. From there he continued his trip, visiting Chicago, New York, Washington, Philadelphia and

TWO things are made for farmers and fruit-growers that are the best of their kind.

C. T. Reynolds Paris Green and Devoe Arsenate of Lead. The former to be used on potato vines or anywhere else where dry powder parasite poison is needed. The latter for spraying trees or other growing things; comes in paste form, to dissolve in water.

When you are ready to buy either or both of these, be sure you get the real thing. 2

Devoe & Reynolds Co.
New York Chicago Kansas City

Makers of pure paints—no other kind

Dependable Brand LIME-SULPHUR SOLUTION

Has been used by the leading fruit growers in the Willamette Valley and has worked wonders in eradicating San Jose scale, anthracnose and other pests which have infested our orchards.

Manufactured by the

GIDEON STOLZ CO.

SALEM, OREGON

Write for our Spray Book and prices.

Spraying Outfit? Here's a REAL BARGAIN!

Besides Furnishing Power for Spraying, This Mighty Engine Does a Hundred Other Tasks!

Here's a combination power-spraying outfit and **PORTABLE POWER PLANT**—at the price of the usual power-spraying outfit alone!

No need to pay **BIG** money for a power-spraying outfit since the versatile **Fuller & Johnson Farm Pump Engine** is on the market!

At insignificant cost get the Fuller & Johnson Spraying Outfit—highest grade manufactured, and guaranteed to give satisfaction—a characteristic product of the F. & J. Mfg. Co.

FULLER & JOHNSON SPRAYING OUTFIT

Dodge the Heavy Outlay of Money for Spraying!

Every grower of fruit—every truck farmer—every farmer of any kind must have an engine to do the heavy work! But where's the sense in buying two kinds of power plants when the Fuller & Johnson Spraying Outfit includes a **PORTABLE** power plant that does the work of both? Spraying is necessary—but it takes only a few days each season. So the thing to

do is to avoid the heavy investment. And the Fuller & Johnson Outfit, with its mighty little engine that works at other tasks besides, is the solution!

Runs 6 to 12 Nozzles!

This spraying outfit keeps a pressure of 140 pounds—ample for every need!—powerful enough to run from 6 to 12 ordinary nozzles. Just set in into a wagon box or truck and put it to work.

Send for Special Spray Bulletin

It is yours for the asking—a postal will bring it—send the postal today.

(103)

Read Combination Offer

Write today for name of nearest dealer and get this bargain—a combination power-spraying outfit and **Portable Power Plant**—at the price of the usual spraying outfit!

If you already have a Farm Pump Engine we can supply you with our matchless spraying outfit, to which you can quickly hitch the engine. If today you have a spraying outfit our engine will run it for you! Easy to attach it.

Fuller & Johnson Mfg. Co. Dept. C

Madison, Wis.

Established 1840



Pittsburg upon a tour of investigation in the interests of the Hood River Apple Growers' Union. Mr. Sproat is a believer in "Live and Let Live," and he believes that the grower should not be unreasonable in the prices he demands for his fruit.

The following is a list of the splendid prices realized by Wenatchee last fall: Spitzenbergs, \$2.50; Winesaps, \$2.25; Black Bens, \$1.75; Missouri Pippins, \$1.50; Delicious, \$3; Arkansas Blacks, \$2.10; Stayman Winesaps, \$1.65; Ben Davis, \$1.40, and all other choice grades at \$1.10.

J. A. Westerlund, president of the Western Orchard Company, of Southern Oregon, says it now contains 1,760 acres, 1,040 acres being planted to apples and pears. This is one of the largest orchard tracts in the valley.

The article written for "Better Fruit" by H. S. Gile, of Salem, Oregon, who is one of the most successful prune handlers in the Northwest, has been copied by a great many other publications. This is very convincing evidence that Mr. Gile understands his business.

The Hood River Apple Growers' Union and the Hood River Fruit Growers' Union, the latter being the oldest union in the Northwest, have consolidated, for the reason that the fruit interests of the valley can be handled by one association cheaper than by two. In recent years the Apple Union has handled apples exclusively, the Fruit Growers' Union handling the berry crop and other small fruits. Hereafter all fruits of the Hood River Valley, including the famous Hood River strawberries, will be handled by the Hood River Apple Growers' Union.



AMONG the premiums for the best ten-box apple display at the recent Denver Apple Show, held at Denver, Colorado, was a silver loving cup offered by the J. C. Pearson Company ("the cement-coated nail people"). Mr. Ellsworth France, of Wenatchee, Washington, was awarded the prize.



THE Union Pacific Railroad is publishing a book on irrigation that will doubtless prove of great interest and assistance to both the practical and prospective irrigator. It will contain about 100 halftone cuts and 150 pages descriptive of many irrigation plants in the West. This book will be sent free to any address on application to the passenger department of the Union Pacific Railroad, Omaha, Nebraska.



BIGGER PROFITS

Spraying can no longer be considered by the up-to-date grower as an expense. It is rather an investment. The man who sprays his orchard systematically and with the proper materials is sure to have a larger crop and more perfect fruit than the man who does not spray.

SHERWIN-WILLIAMS

NEW PROCESS ARSENATE OF LEAD

will help you secure bigger profits on your orchards because its application will insure a much larger percentage of fruit that is good and therefore of higher market value to you. S-W Arsenate of Lead is light in gravity and remains well in suspension so that a uniformly poisonous spray can be thrown from the finest nozzle. It is sure death to all leaf-eating insects. Write for booklet to



THE SHERWIN-WILLIAMS Co.

MAKERS OF HIGHEST GRADE INSECTICIDES AND FUNGICIDES

707 CANAL ROAD, N. W., CLEVELAND, OHIO



To Destroy Aphis and Plant Lice Without Injury to Foliage, Use "BLACK LEAF" TOBACCO EXTRACT

A FEW TESTIMONIALS FROM EXPERTS YOU PROBABLY KNOW

PROF. C. P. GILLETTE, of the Colorado Experiment Station: "We used 'Black Leaf' Extract to a considerable extent in our experiments in the vicinity of Grand Junction, Colorado, the past summer, and found it very satisfactory indeed, both for the destruction of woolly aphis and the green aphis of the apple tree. We also used it against the black peach aphis and the green peach aphis with equally good results. So far as I am able to learn, universal satisfaction was given wherever the decoction was used as strong as one part in seventy-five parts of water."

MR. LUTHER BURBANK, Santa Rosa, California: "I have found 'Black Leaf' Tobacco Extract convenient and satisfactory for destroying aphis and other insects."

PRICE: In 5-gallon jacket cans, 85 cents per gallon, f.o.b. Louisville, Kentucky, or in the Central states; the average Western price being 95 cents per gallon. In 1-gallon cans the price is \$1.00 each, f.o.b. Louisville, Kentucky, and at most points east of Omaha.

DILUTION: For spraying fruit trees, 1 gallon of "Black Leaf" is usually diluted with 70 gallons of water.

UNIFORM STRENGTH: Owing to the fact that "Black Leaf" is permitted by the United States Department of Agriculture to be used in official dipping of sheep and cattle, "Black Leaf" is marketed under a positive guarantee as to nicotine strength. This feature will doubtless be duly appreciated by fruit growers.

DELTA COUNTY FRUIT GROWERS' ASSOCIATION, Delta, Colorado: "'Black Leaf' is the best remedy we have ever found for plant lice on fruit trees, as it not only cleans up the pests, but seems to invigorate and tone up the trees when it is applied to them while the foliage is on."

MR. A. N. JUDD, Watsonville, California: "For all plant lice, and green or black aphis, 'Black Leaf' Tobacco Extract is the most gratifying of all washes."

HOOD RIVER APPLE GROWERS' UNION, Hood River, Oregon: "We are satisfied 'Black Leaf' is going to take the place of all other aphis sprays in this section."

ROGUE RIVER FRUIT GROWERS' UNION, Medford, Oregon: "'Black Leaf' does not burn nor injure the foliage or the fruit, and will eradicate aphis immediately."

MANUFACTURED BY THE

KENTUCKY TOBACCO PRODUCT CO.

(INCORPORATED)

LOUISVILLE, KENTUCKY

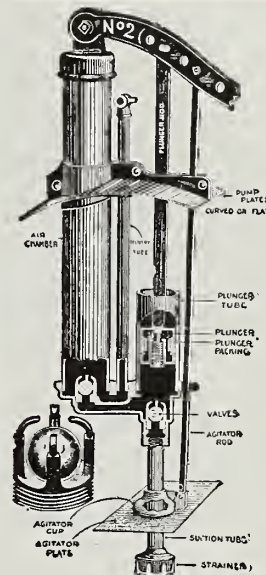
OF THE three kinds of natural resources, atmosphere, sunshine and the earth, but one, the earth, is in any way under man's control. All living things owe their sustenance, either directly or indirectly, to the earth, or that portion of the loose, disintegrated covering which we call the "soil." Eight elements, in their various forms of combination, form the large part of the soil. These combined, first to form gases, later liquids, and finally solids or minerals, the aggregation of which forms the rocks of the earth's surface. Five agencies were chiefly instrumental in breaking down the rocks to form soil. These are: The atmosphere, heat and cold, water, ice, plants and animals. These working separately and in combination caused the rocks to decay and crumble, thus forming a suitable growing place for plants. Because of the mixed conditions in which we find soil materials, they cannot be classified according

to the rocks from which they came. The classification adopted is based on the agencies which had to do with transporting soil particles and placing them as they exist today. Soils are either sedentary, not having been moved from the place of original formation, or have been transported by various agencies.



THE TIME to apply nitrate of soda is very near. To get the best results on market-garden crops it should be applied just after seeding or replanting; on fruit trees, preferably just before or while the trees are in bloom. Professor W. S. Thornber, of the Washington State Agricultural Experiment Station, Pullman, writes: "I find that from two to four ounces of nitrate of soda applied to the ground from twelve to eighteen inches from the roots of newly planted trees materially aids their growth, especially in raw sagebrush land. I shall recommend this in my future publications, as

I have in one of my past bulletins. With the growing of nursery stock, light applications of from thirty to forty pounds per acre two or three times during the season materially benefits the tardy growing sorts." L. K. Brooks, Selah, Wash-



Mr. Leigh, superintendent, put on the N. Y. C. stock yards, Buffalo, New York, forty tons (80,000 pounds) of cold water paint with these wonderful hand machines. In this event the Spramotor has ably proven its value. A demonstration like this is more convincing than a bookful of arguments. The Spramotor is guaranteed for a year. In all sizes for orchard, potatoes, painting and whitewashing, vineyard and weed destruction. Say what you want it for. This ad. will not appear in this paper again; if interested write now.

R. H. HEARD

1335 Erie Street

BUFFALO

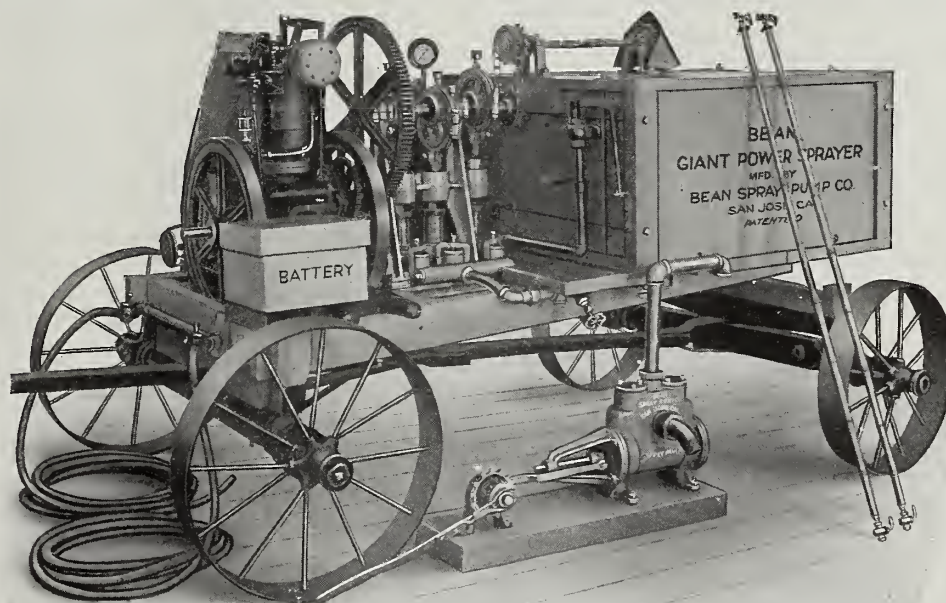
SPRAY WITH THE OLD RELIABLE BRAND SWIFT'S ARSENATE OF LEAD

Manufactured only by the

MERRIMAC CHEMICAL CO., Boston, Massachusetts

WOODARD-CLARKE CO., Portland, Oregon

You Want a Bean Power Sprayer



If you want a power sprayer at all.

You want a Bean because it is the most practical, economical, serviceable power sprayer on the market. It's built for business; thoroughly accurate in all its parts; strong, durable, and guaranteed to back up every claim that we make.

Made with Bean patent bell-metal ball valves; porcelainized cylinders that cannot corrode or rust; perfect engine-cooling devices; and other features that you'll find in no other sprayer.

The Bean Power Sprayer is compact, low down, light, and offered in varying capacities. It can be used in any orchard, large or small, hilly or level.

And all parts are easily accessible and may be replaced without trouble. It doesn't take a machinist to operate a Bean.

SEND FOR OUR FREE CATALOG 22. It tells all about Bean Power Sprayers: how they are made; what they are made of; what they can do; why they are made as they are, and, in fact, everything you want to know—and ought to know—before you buy. Just drop us a postal or cut this corner from the ad and send it to us with your name and address. Also sales agent for Ortho Brand Non-Burning Arsenate of Lead, put up in steel containers. We carry stock in Portland. Write us for attractive prices.

Bean Spray Pump Co.

"EVERYTHING FOR SPRAYING"

213 W. Julian St., San Jose, California

Cleveland, Ohio

BEAN MAGIC HAND SPRAYERS

The only hand sprayers that enable the operator to maintain an effective pressure for any length of time. With a Bean Magic you can spray your trees at a pressure of 120 or 130 pounds, reaching every limb and effectually destroying all scale and fungus growth.

By our patent mechanism only two-thirds as much labor is required to operate a Bean Magic Pump as is required to operate any ordinary pump at the same pressure. Send for Catalog 24.

ington, says: "I applied the nitrate to currants, gooseberries and blackcaps. The fruit was exceptionally fine. The currants and gooseberries were exhibited at the A.-Y.-P. Exposition, and the quarter acre of blackcaps were the finest I ever saw." Apply the nitrate of soda by broadcasting it evenly over the entire surface of the orchard you are fertilizing, at the rate of 200 pounds per acre, during the early spring months, preferably just before or while the trees are in bloom. As nitrate is a powerful plant tonic and energizer—it is not a stimulant in any sense of the word—a very small quantity does a very large amount of work. The nitrate of soda may be used alone, at the rate of not more than 200 pounds to the acre, when it may be used without other fertilizers. If it be desired to invest in larger amounts of nitrate and use heavier applications per acre, the use of potash salts and phosphates is also recommended. The use of nitrate will be found quite satisfactory also in its after-effects in perceptibly sweetening sour land. Since nitrate works itself into the ground soon after broadcasting, no after-harrowing in, or cultivating it in, is necessary, as a rule, except in a dry season or in dry climates, but its use does not take the place of thorough cultivation by any

means, and we advise a good cultivation if your orchard is in tilth. One hundred pounds of nitrate is equal in bulk to about one bushel. Should the nitrate become hard, it can be readily pulverized with the back of a shovel, or a mallet. Generally, on the Pacific Coast, nitrate may be applied as a top dressing after the heavy spring rains are over, but before crops attain much of a start. Although recent experience on the Pacific Coast suggests that nitrate may be applied to better advantage just as soon as growth starts in the spring, or even before seeding or planting, followed by a good cultivation. In case your orchard is in tilth cultivate immediately after applying the nitrate.

fungicides it has become very necessary that their quality should be standardized, so that definite recommendations for their use may be made with accuracy and so that adulterated and inferior articles may not be imposed upon the farmer. In view of the fact that many states are enacting such legislation, the manufacturers are warmly in favor of a national law which will govern interstate traffic and which will tend to secure greater uniformity of state legislation. While the passage of such a national law would not prevent state legislation, it would in most cases make special legislation by the states unnecessary, and where states desired to legislate they would tend to pass laws similar to the national law. Several conferences of entomologists, agricultural chemists and manufacturers have been held and practically all of the large manufacturers of insecticides and fungicides are heartily in favor of the measure, which is drawn to protect the legitimate interests of both the consumer and the reputable manufacturer. The measure has been again introduced at the present Congress in the House (H. R. 2218) by Hon. E. A. Hayes of California, and has been referred to the committee on interstate commerce. The bill will also be introduced in the Senate and

PURE INSECTICIDES AND FUNGICIDES.
At the last session of Congress a bill was introduced in both the Senate and House providing for the government control of the purity of insecticides and fungicides in much the same manner as the purity of foods and drugs is now controlled. This bill was introduced at the instance of the Association of Economic Entomologists. With the increased use of manufactured insecticides and



THE "New-Way" POWER SPRAYER

Always ready for any work in any climate
Easily detached

IS EQUIPPED WITH THE FAMOUS

"NEW WAY" AIR COOLED ENGINE

Gasoline, Distillate or Alcohol Fuel

Carries high pressure without the usual vibration or strain, and is the most practical, durable and economical machine ever built for spraying. Use your own running gear if you prefer. Write us today for Spray Catalogue No. S-8

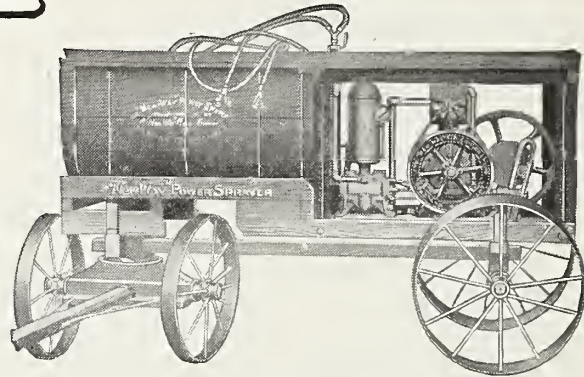


John Deere Plow Co.

Portland, Oregon

GILBERT & VAUGHAN

Local Agents Hood River, Oregon



Fruits of High
Quality
Follow this
Quality
Sprayer



GRASSELLI ARSENATE OF LEAD DESTROYS ALL LEAF EATING INSECTS

*Extensively used in the Northwest
Sticks to the foliage and will not burn*

Distributors:

WENATCHEE PRODUCE COMPANY, WENATCHEE, WASHINGTON

E. O. KECK, NORTH YAKIMA, WASHINGTON

H. S. CHURCH, SPOKANE, WASHINGTON

HARDIE MANUFACTURING COMPANY, PORTLAND, OREGON

And in all other consuming districts

Write above or write our St. Paul office for name of nearest distributor. We have been making chemicals for over seventy-five years. Insist on Grasselli Brand and get the benefit of this long experience by increased value of crops

THE
GRASSELLI CHEMICAL COMPANY
ST. PAUL, MINNESOTA

an earnest effort will be made by the executive committee representing the entomologists, chemists and manufacturers to bring the measure to a vote before Congress. Practically all the leading horticultural and agricultural organizations of the country have endorsed the measure. It seems probable that the bill will be passed by Congress, if the members of Congress become convinced that the people wish and need such legislation. At the last session of Congress the bill was favorably reported by the Senate committee on agriculture, but this report was so late in the session that pressure of other business prevented vote at the short session. In their report this committee stated as follows:

"The bill was referred to the Secretary of Agriculture with the request for his views thereon, and the measure as amended is exactly in line with his recommendation. The legislation has the unanimous endorsement of practically all the organizations of practical growers in the country, as well as the National Grange, the National Apple Growers' Congress, the American Association of Economic Entomologists, and in fact all the organizations representing the consumers. On the other hand, practically all of the leading manufacturers are heartily in favor of the measure. Your committee considers the legislation of vital interest to the fruit and truck growers of the country and recommends its enactment in a law."

We hear very frequent complaint of impure or ineffective insecticides. In many cases these complaints are unwarranted, and lack of success is due to improper usage rather than poor quality, but there is no question that inferior goods are on the market, as shown by the publication of analyses by some of the experiment stations. In the last Yearbook of the United States Department of Agriculture it is stated that the bureau of chemistry has analyzed samples of arsenate of lead which were practically nothing but white arsenic. This would of course be quite injurious to foliage. The sale of such an article is not only unfair to the consumer, but hurts the sale of properly made arsenate of lead, than which there is no better arsenical insecticide. If the fruit and truck growers and farmers of the country desire such legislation for the control of the purity of insecticides and fungicides they should let their Congressmen hear from them at once in favor of the passage of this measure (H. R. 2218) and make their position clear as to the need of such a law. If you are interested in this write your Congressmen at once, stating that the bill is before the committee on interstate commerce, and you wish their influence towards favorable report by the committee and prompt action by the House. Write at once, as the matter is being pushed for speedy consideration. If every one interested will thus show their interest the law can speedily be passed.

THE WATERLOO GASOLINE ENGINE *Is the Steady Service Engine*

Eliminates usual gasoline engine troubles. Write for complete descriptive catalogue, which explains in detail the many superior features.

2-horsepower - - \$ 90.00

4-horsepower - - 160.00

f. o. b. Portland, Oregon

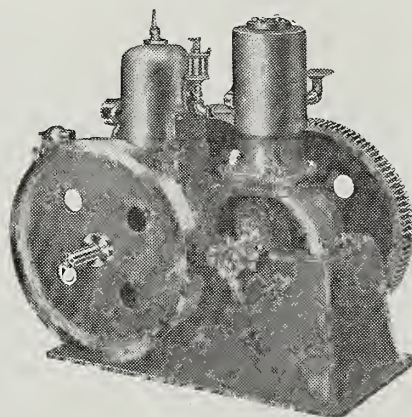
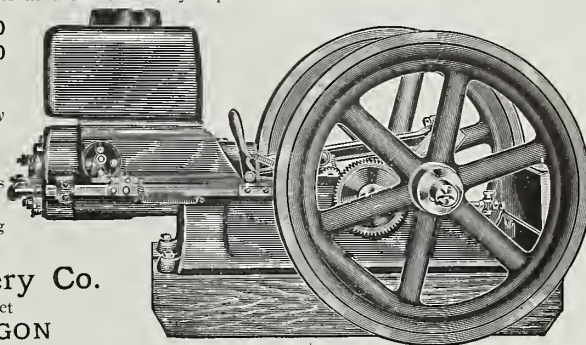
Write us about your machinery and pump requirements

Pipe Pumps Windmills
Gasoline Engines Launches
Well Drilling Outfits
Hydraulic Rams Fittings Belting
Saw Mill Machinery

Reierson Machinery Co.

182-4-6 Morrison Street

PORTLAND, OREGON



MARVIN'S GASOLINE AIR COMPRESSOR SPRAYER

To be used in connection with steel tank instead of gas. Cost of operation about fifty cents per day for gasoline and oil. Gasoline engine and air compressor on same base; weight only about 350 pounds

CATALOG ON APPLICATION

E. P. Marvin, Jr. Lockport, N. Y.

The Spray Pumps That Stand Hard Knocks

That's a splendid recommendation when it can be said truly. Spraying is no easy matter, and it takes a pretty substantial outfit to come unharmed through the hard knocks of the season-after-season strain of practical orchard work. Deming Sprayers DO stand the strain, as thousands of 'growers gladly acknowledge, because these Sprayers are built for that purpose—sold to stay sold. For that reason, and because they're designed by people who know what a good sprayer must be and do, we're selling more and more of them every year.

Deming Spray Pumps

Have been on the market for more than fifteen years; adopted and recommended by most state experiment stations; used and prized wherever fruit is grown. We offer more than twenty styles, hand and power. The illustrations show our Figures 645 and 656, very popular in the West. Double-acting; develop high pressure; splendidly built.

Thousands of Deming Nozzles Sold Each Year

We make a special point of our nozzles, particularly the "Bordeaux" and "Demorel." The nozzle is always the "business end" of the outfit and Deming Nozzles are made to satisfy the demands of the most critical growers. Order Deming Spray Pumps and Nozzles from your hardware or implement dealer, or direct from us if he doesn't handle them. Our 1910 Spray Book will interest you. It's free—write.

CRANE CO., Pacific Coast Agents

Portland, Seattle, Spokane, Tacoma, San Francisco

THE DEMING COMPANY, Manufacturers

743 Depot Street, Salem, Ohio

Spray Pumps and Nozzles, Power Pumps for Irrigation and Water Supply, Hydraulic Rams, Hand and Windmill Pumps, Etc.

Medford Spray Co.

MEDFORD

Oregon Spray Co.

PORTLAND

Hood River Spray Mfg. Co.

HOOD RIVER

These Factories Make and Distribute the Famous

NIAGARA Lime-Sulphur Spray

The leading fruit growers and fruit growers' associations of the Northwest use NIAGARA exclusively

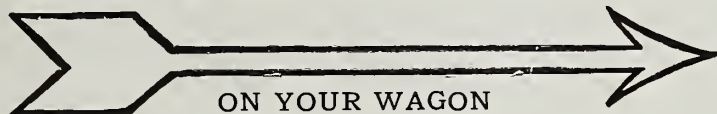
There is a Reason Why

NIAGARA is made under special process originated by ourselves. The only known process by which is made a permanent, clear and reliable solution of lime and sulphur of sufficient strength to meet all requirements

Write for Further Information

Wherever Fruit Excels NIAGARA SPRAY is Used

THIS

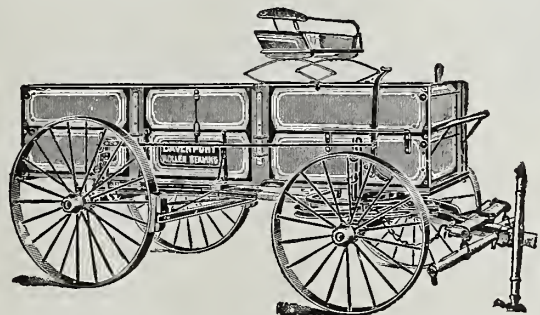


Means 30 to 50 Per Cent Lighter Draft

For your team. It is the Davenport way. The roller bearings in the wheels save horseflesh. There's only one wagon of the kind. The wagon of little friction, little wear, light draft, and the wagon of long life is the

DAVENPORT ROLLER-BEARING STEEL WAGON

You ought to have your horses in mind when you buy, for you use your wagon nearly every day in the year. Two horses on a Davenport are as good as three horses on any other wagon, and it has been proved over and over again.



THE AUTOMOBILE HUB

Its bearings are perfectly boxed. No chance for mud, water, sand or dust to get in. It is oiled through an automatically closing oil cup without removing wheels. An even distribution of weight in the Davenport bearing. With no sand to cut and no undue strain anywhere, there's practically no wear-out to the cold rolled steel rollers.

STEEL WHEELS AND STEEL GEAR

Davenport wagon users don't have breakdowns, for it's steel all over. Nothing to dry apart, rot or work loose. Spokes are hot welded in hubs and tires, practically all one piece. Both gears are steel and are put together on the truss principle, like a bridge.

DON'T BUY A WAGON THAT GOES TO RACK. The price of the Davenport is nearly the same as a good wooden wagon, but think of the repair bills you save! And the annoyances you avoid! And think of the many, many hard pulls you save your horses. Write and let us mail you Catalog V free to tell you all about it.

DAVENPORT WAGON CO., Davenport, Iowa

REX!

REX!

REX!

Rex Lime and Sulphur Solution

Get the best, nothing but the best, and you will always have the best results.

REX stands unquestioned as being the **best** Lime and Sulphur Solution on the market today, and is the **standard** which all other manufacturers try to imitate.

REX is a 33° Baume solution. Professor R. W. Thatcher, director of Pullman Experiment Station, will tell you that REX, when diluted 1 to 16, is equal to the 1-1-5 Piper formula which the Experiment Station Spray Bulletin recommends the grower to use when cooking his own material.

Mr. Fruit Grower, you have only to use REX Lime and Sulphur Solution once to use it always. All **experts** will tell you what REX will do; those who don't know—their say-so isn't worth having.

We Manufacture and Sell it

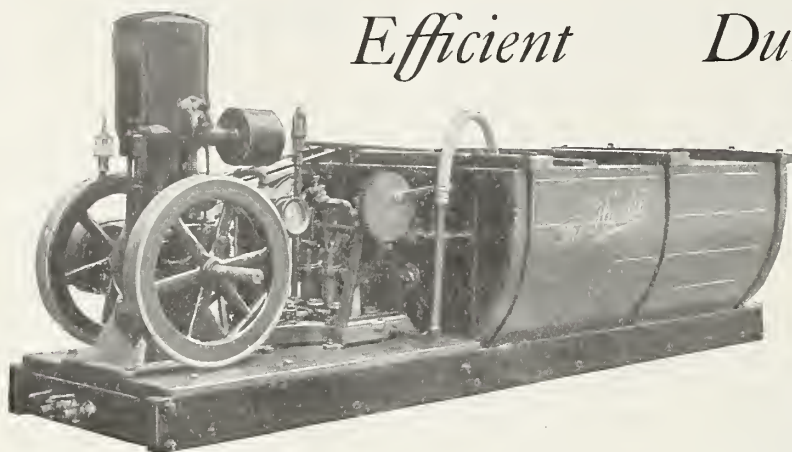
WENATCHEE REX SPRAY COMPANY
Wenatchee, Washington

YAKIMA REX SPRAY COMPANY
North Yakima, Washington

Write for prices and information.

The Hardie Triplex Sprayer

Efficient Durable Simple



NOTHING
TO WATCH
BUT THE
SPRAY

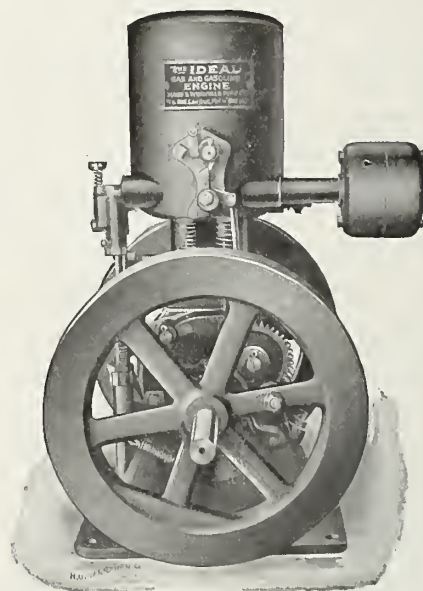
OUR 1910 model Triplex will suit you; will suit you in efficiency, in simplicity, in pressure, in capacity and in general makeup. Our TRIPLEX PUMP gives you an even continuous pressure, be it high or low, as desired. Our Rotary Agitator gives thorough agitation and our Ideal Engine sufficient power.

On all Hardie Power Sprayers we use Our

IDEAL ENGINE

WE use this engine as it is compactly built, has no extra water or gasoline tank and is built for hard continuous service. The cooling system is the most practical of any.

No Tank No Fan No Freezing



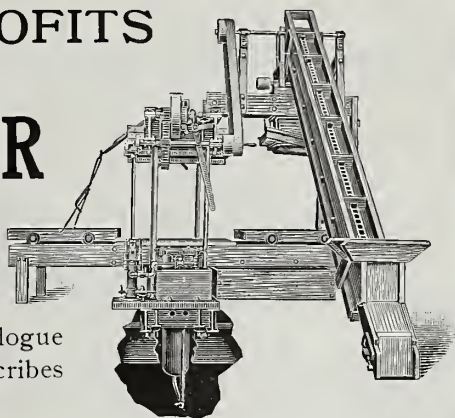
Our complete catalogue giving prices of twenty different styles of hand and power sprayers, engines, nozzles, etc., is yours for the asking

The Hardie Mfg. Co.

Hudson, Michigan

22 Front Street, Portland, Oregon

BIG PROFITS IN CIDER



Write for Catalogue
which fully describes
and illustrates

THE ORIGINAL MOUNT GILEAD HYDRAULIC Cider and Wine Presses

Capacity, 10 to 400 barrels per day
Made in all sizes, hand or power

FULLY GUARANTEED

Write for any information desired. We can show
you how \$1,500.00 clean profit can be made.

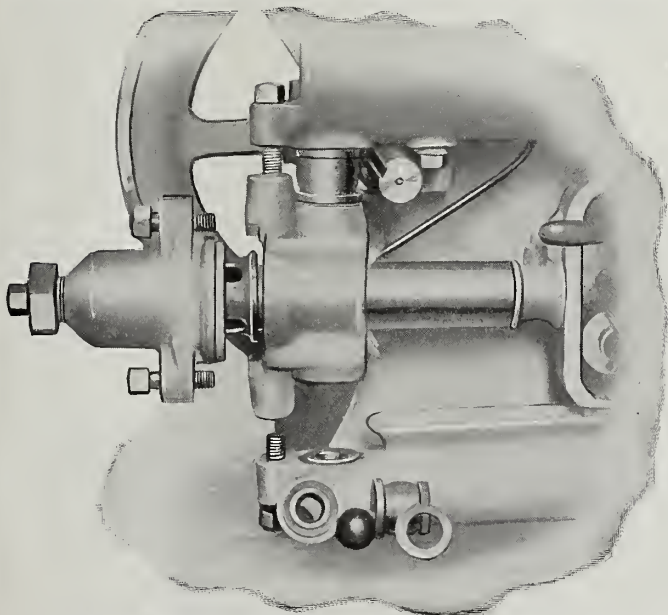
The Hydraulic Press Mfg. Co.

Largest Manufacturers of Cider Presses in the World
60 Lincoln Avenue MOUNT GILEAD, OHIO

Western Sales Agents:

The Western Supply Company, Portland, Oregon

HERE IT IS! THE FRUITGROWER'S FRIEND



DEASSEMBLED PUMP CYLINDER AND VALVE

This illustration shows the new and novel plan of construction of the
IMPROVED "FRIEND" POWER SPRAYER

Note the quick detachable valves and valve seats; quick removable and
adjustable packing. No pipes or plumbing.

Read our ad. in the January issue.

Write us for description of our CALIFORNIA Model, the great \$350.00
Sprayer. We make them all sizes and capacities. Write us explicitly
relative to your requirements. We have the GOODS. It's now up to you.

FRIEND MFG. CO.

Niagara Co. Gasport, New York

Manufacturers of the world's best Hand and Power Spraying Outfits, and the
celebrated "FRIEND" Nozzles, angle and regular.



Excursion Rates to the East

DURING 1910

FROM ALL POINTS ON

The Oregon Railroad & Navigation Company

To Chicago	\$72.50
To Council Bluffs	60.00
To Omaha	60.00
To Kansas City	60.00
To St. Joseph	60.00
To St. Paul	60.00
To St. Paul via Council Bluffs	63.90
To Minneapolis direct	60.00
To Minneapolis via Council Bluffs	63.90
To Duluth direct	66.90
To Duluth via Council Bluffs	67.50
To St. Louis	67.50

Tickets will be on sale May 2 and 9, June 2, 17
and 24, July 5 and 22, August 3, September 8.

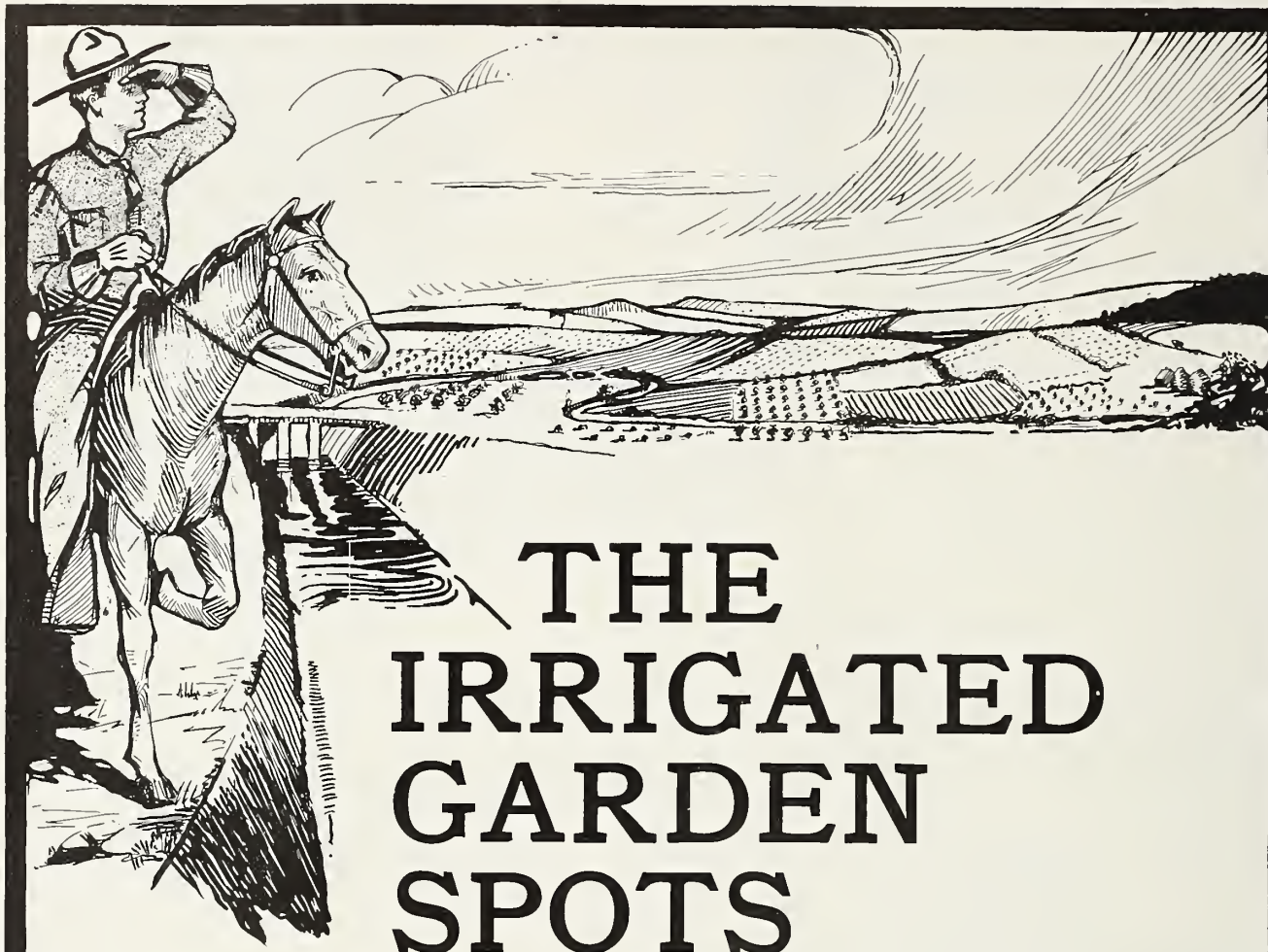
Ten days provided for the going trip. Stop-
overs within limits in either direction. Final return
limit three months from date of sale, but not later
than October 31. One way through California,
\$15.00 additional.

Inquire of any O. R. & N. Agent for more
complete information, or

WM. McMURRAY

General Passenger Agent

Portland, Oregon



THE IRRIGATED GARDEN SPOTS

Of the Northwest, along the Northern Pacific Railway, not only make ideal homes, but embrace land that is productive to an astonishing degree. The small, irrigated farm is most easily worked—the tiller of the soil is sure of his crops. His land needs only the water to make it

produce bountifully—and the water is there at his command. He farms scientifically, economically and with no waste of effort. The irrigated lands in Montana, Idaho, Washington and Oregon are cheap when you figure their productive capacity. Farm units under United States Government irrigation projects may be secured on easy terms and deferred payments. The climate in the Northwest is a great inducement. People are constantly buying land there. Don't delay too long. Write tonight for information about the section that interests you and about the home-getting opportunities along

THE NORTHERN PACIFIC
EXTENDS THROUGH OR
INTO MINNESOTA, WIS-
CONSIN, NORTH DAKOTA,
MONTANA, IDAHO, WASH-
INGTON, OREGON. NEW,
RICH TERRITORY BEING
OPENED UP BY EXTEN-
SIONS NOW BUILDING.
THE HOMESSEEKER'S
CHANCE!

The Scenic Highway Through the Land of Fortune

Northern Pacific Railway

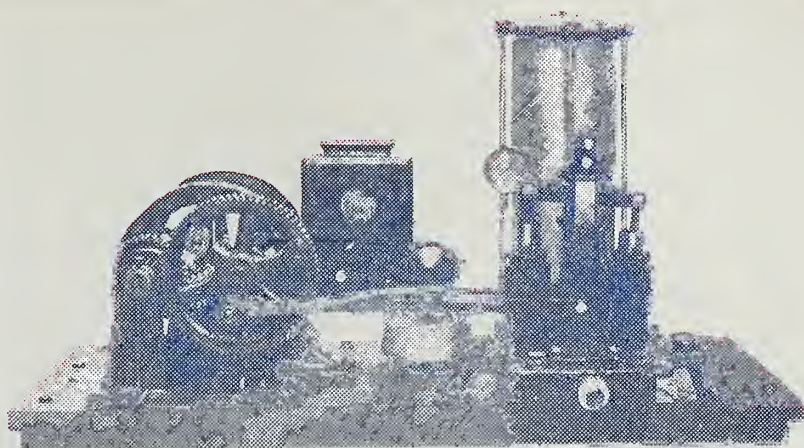
L. J. Bricker, General Immigration Agent, St. Paul, Minnesota

A. M. CLELAND, General Passenger Agent, St. Paul

A. D. CHARLTON, Assistant General Passenger Agent, Portland



THIS IS IT—



The Stover High Pressure Spray Outfit

SIMPLEST, MOST EFFICIENT SPRAYER EVER PLACED ON THE MARKET

One Horse Power Stover "Hopper Cooled" Gasoline Engine. Light, strong and economical.

Mitchell Double Vertical Cylinder Spray Pump.

Easily the best pump we have ever sold. Large

air chamber. Mounted on a strong

base. This outfit is compact, easily

handled and is needed by every fruit

grower.



PORTLAND, OREGON

Spokane, Washington

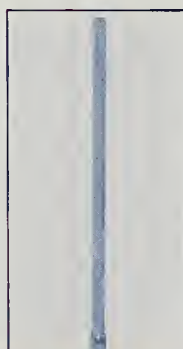
Boise, Idaho

Don't fail to get our prices
on this machine

THE KIMBALL

Is the Best

**Orchard and Summer
Fallow Cultivator
on Earth**



IS THE TESTIMONY OF:

E. H. Shepard, Editor "Better Fruit,"
Hood River, Oregon

A. P. Bateham, Manager East Hood
River Fruit Co., Mosier, Oregon

Dr. G. E. Sanders, Owner Roseland
Orchards, The Dalles, Oregon

And Thousands of Others



SEND FOR ILLUSTRATED DESCRIPTIVE CIRCULAR

Johnston & Weber

MANUFACTURERS

Ninety Per Cent Hood River Orchardists Use This Machine

THE DALLES, OREGON

TO OPERATORS

WE DEAL EXCLUSIVELY IN

Wholesale Orchard Lands

READY FOR

Subdivision and Colonization



A view of one of the valleys we have for sale

Tracts range from 200 to 5,000 acres in districts noted for their production of the high priced fancy fruits. Ideal climate; picturesque surroundings; where every modern convenience is possible. Large tracts of land particularly adapted for subdivision are scarce. 1910 will see a marvelous emigration to Oregon. Secure your properties and be ready to reap the profits when the influx reaches you. State your wants concisely. We are confident we can supply you. Prices on *wholesale tracts* are advancing rapidly. There are a few splendid buys left.

ADDRESS

M. C. MILLER

ROSEBURG, OREGON